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Air Conditioning & REFRIGERATION



NEWS

Gov't Prepares Allocation Plans For Freon Gases

Refrigerant Will Be Parceled Out By Classes of Use

WASHINGTON, D. C.—Allocation of available supplies of "Freon" refrigerant gases to users and manufacturers of refrigeration and air conditioning equipment in the order of relative importance to the public welfare is directed in a program announced Aug. 19 by the Office of Price Administration & Civilian Supply (OPACS).

According to the announcement by the government agency, current supplies of "Freon" are expected to be adequate for the maintenance of all installed refrigeration and air conditioning equipment, "but some deliveries for new units may have to be deferred until the summer ice cream and air conditioning season is passed."

Four classes of users of "Freon" are set up. Each class must have its requirements completely filled before any of the refrigerant is allotted to the next lower class.

A senior classification is assigned in the program to maintenance of all types of refrigerating equipment now operating and existing air conditioning equipment in hospitals, clinics, and sanatoria.

Maintenance of industrial air conditioning equipment already installed ranks next in preference, followed by maintenance of other air conditioning equipment, then by manufacture of new refrigeration and air conditioning equipment.

Cooperation of "Freon" consumers is essential if equitable allotment of available supplies is to be achieved, the announcement pointed out. OPACS suggests that (1) reasonable requirements should be anticipated, but shipment of more than a 30 days' supply should not be requested; (2) empty cylinders should be returned promptly.

Text of the program is as follows: "The total defense and civilian demand for certain chlorinated hydrocarbon refrigerants is in excess of the available supply. It is necessary, therefore, after military defense needs are satisfied, to provide for the equitable allocation of the residual supply among competing civilian demands."

"Accordingly, pursuant to and under the authority vested in me by Executive Order No. 8734, particularly Section 2(a) thereof, the following program is announced:

"1335.31 Allocation of Materials. Civilian uses of those chlorinated hydrocarbon refrigerants enumerated in 1335.32 hereof shall be divided into four classifications as set forth in 1335.33 hereof. To the extent that supplies of these refrigerants are available for allocation among competing civilian demands, supplies for civilian uses enumerated under Classification A shall be given primary preference.

"If it appears, in any month, that the available supply for that month will exceed the amount estimated to be required for the uses enumerated under Classification A, supplies for civilian uses enumerated under Classification B shall be given secondary preference.

"If it appears, in any month, that the available supply for that month will exceed the amount estimated to be required for the uses enumerated under Classifications A and B, supplies for civilian uses enumerated under Classification C shall be given tertiary preference. If it appears, in any month, that the available supply for that month will exceed the amount estimated to be required

(Concluded on Page 2, Column 4)

Why Don't They Open the Idle Copper Mines

Two letters printed below are samples of reader reaction to the editorial in the Aug. 13 issue of the NEWS. This industry is starving for copper. Yet copper mines are closed because Leon Henderson has established a price ceiling of 12 cents a pound on copper.

Henderson has asked Congress for authority to purchase deep-mine copper at 14 cents a pound. Congress hasn't acted yet. Why?

One of the industry's best-informed executives tells us that 14-cent copper would raise the price of an electric refrigerator about 6 cents, and increase the cost of an automobile some 60 cents. But, no 14-cent copper is available.

Silly, isn't it? Silly? Hell, it's tragic!

Betz Corp.
Hammond, Ind.

Editor:

I have just finished reading your editorial in this week's issue of REFRIGERATION NEWS, concerning the copper mines in the upper peninsula of Michigan.

I have just recently returned from a fishing trip into this territory and, as a matter of fact, made my headquarters in Copper Harbor, which is the very heart of the copper mining country. Being vitally interested in the supply of copper, I made it a point to gather information.

As everyone knows, all of the mines are shut down because they are quite old and it is necessary to get the copper from very great depths. As a result, it is not profitable to operate these mines on a basis of a copper price of 12¢ a pound, although they can be for 14¢.

Naturally everyone is out of work and on WPA. In one sizeable town every single male inhabitant, including the mayor, is on the WPA rolls. The point that seems non-sensical to me is that, if the government insists upon a ceiling of 12¢ for copper, why they do not subsidize an additional 2¢ for old mines such as in the upper peninsula of Michigan—which would immediately put these mines into operation and thereby not only would industry get the copper it so vitally needs, but the extra 2¢ a pound subsidized by the government would nowhere equal the amount of money spent by it on WPA projects.

In addition, many industries in the country paying thousands of dollars in taxes would keep their doors open and their men employed whereas there is a very good likelihood that, because of a lack of copper, they will have to close.

LYMAN B. BETZ

Fairbanks, Morse & Co.
Chicago, Ill.

Editor:

I am more than mildly interested in your editorial of Aug. 13 entitled "Open Up Idle Copper Mines."

Certainly, if any one industry is getting a kicking around, it is refrigeration and air conditioning. To me it seems that of all industries, ours is probably the poorest organized to do anything about keeping materials moving into our plants.

I hope that some of the publicity work your paper is doing will be noticed by some of the members of the OPM and other ABC agencies. Certainly some of the glaring boners made by them should be brought to light in order to get them corrected.

The story of the importance and necessity of refrigeration and air conditioning hasn't been brought forcibly enough to their attention to get relief on vital materials.

J. W. BOSTWICK

Gov't Regulations On Credits Become Effective Sept. 1

WASHINGTON, D. C.—Inclusion of ice refrigerators and attic fans to the list of items affected constituted about the principal changes of interest to the refrigeration and air conditioning field from the proposed draft of regulations affecting installment credit (published in last week's issue) and the official regulations announced last week, which become effective Sept. 1.

However, on Monday, Aug. 25, Marriner Eccles, Federal Reserve Board chairman, warned that regulations of installment buying and credit may have to be further tightened.

"The public should be fully aware that the regulations are subject to change as economic conditions require a further dampening of buying power in order to safeguard the interests of consumers and the public generally," Mr. Eccles stated.

The regulations effective Sept. 1 limit to 18 months the maximum length of installment purchase contracts, while the maximum amount of the purchase price which may be paid in installments ranges from 66% to 90%.

Refrigerators are in the third or "C" group which includes 11 varieties of household appliances including air conditioners (apparently the room cooler variety) and radio receiving instruments. Here the maximum amount of the contract which can be financed is 80%—or in other words, a 20% down payment.

In the four groups are such pieces of equipment as furnaces, water pumps, water heaters, home air conditioning fixtures, attic ventilating fans, and plumbing and sanitary fixtures. On these a maximum credit of 85% can be obtained.

On new household furniture, including ice refrigerators, bed springs and mattresses, pianos and electric organs, the installment terms may cover 90% of the contract.

It CAN Happen Here, If Materials For Units and Parts Aren't Available

TOKYO, Aug. 23 (United Press)

—One person died and 60 were seriously ill today of food poisoning as the result of eating food served in a restaurant the refrigeration of which was alleged to be faulty. As 60 persons were made ill two weeks ago by food served to them in a restaurant, the police were expected to start a campaign against unsanitary food conditions.

(A similar occurrence is not unlikely in this country if the government doesn't allocate materials for commercial refrigeration equipment and parts. Maybe it would be a good idea to clip this item and send it to your congressman and senator, and to the Office of Production Management, Washington, D. C.)

Wolverine Shuts Down Copper Casting Work

DETROIT—Copper casting operations at Wolverine Tube Co. were temporarily shut down at the end of last week, because of insufficient August allocations. Castings is the first step in the company's manufacturing process, and the closing of these operations has not affected operation of the plant, major production of which is for defense purposes.

Casting operations will be resumed as soon as September allocations are made, it is expected.

Protest Refrigeration Tax as 'Pyramiding' & Discriminatory

4 Industry Groups Heard By Senate Committee

WASHINGTON, D. C. — Four briefs filed Aug. 19 before the Senate Finance Committee by four different associations opposed the pending 10% excise tax on commercial refrigeration equipment, the main points made being that (1) it amounts to a tax on food; (2) refrigeration is the only machinery singled out for the tax; (3) it is discriminatory because commercial ice refrigerators are not taxed; (4) the proposed law as written seems to "pyramid" the tax through a tax on parts.

The groups filing the briefs were the Air Conditioning & Refrigerating Machinery Association; the National Refrigeration Supply Jobbers Association; the National Restaurant Association; and the Refrigeration Equipment Manufacturers Association.

Senators at the hearings listened attentively to the briefs and asked several questions of the men who made the presentations (see transcript of hearings following).

Some of the committee members seemed to be quite impressed with the arguments presented by E. A. Vallee, speaking for Rema, and Alex Holcombe, Jr., speaking for the N.R.S.J.A., on the possibility that that tax might be pyramided, and indicated a possible revision of the wording if the proposed bill goes through.

(The inequity in pyramiding can be seen in the following example. If a factory branch sold a condensing unit to a consumer, there would be only one tax. But suppose the manufacturer sells it to a distributor or a jobber, who then sells it to a dealer or a service contractor, who then sells it to a consumer. There may be three taxes on the unit. And parts sold down the line in the same way might be similarly taxed.)

The senators also seemed surprised and impressed by figures which Mr. Holcombe introduced from the July 16 Special Commercial Refrigeration Section of AIR CONDITIONING & REFRIGERATION NEWS, which demonstrated that the amount of steel used in the manufacture of all condensing units produced in this country in a year would only be enough for 1/3 of one battleship.

At the urging of one of the senators a table of this information was included in the formal record of the hearing.

Transcript of the testimony given before the Senate Finance Committee Aug. 19 follows:

STATEMENT OF E. A. VALLEE, MILWAUKEE, WIS., PRESIDENT, REFRIGERATION EQUIPMENT MANUFACTURERS ASSOCIATION

MR. VALLEE. My name is E. A. Vallee. I am vice president of the Automatic Products Co. of Milwaukee, Wis., and I am speaking as president of the Refrigeration Equipment Manufacturers Association. We represent about 56 manufacturers of refrigeration equipment as described in paragraph (b) of section 3405 of the bill, H. R. 5417. We also manufacture the majority of the parts, supplies, and controls used in the servicing and maintenance of existing refrigeration equipment. I have several of my associates with me who may be able to answer any questions that I may not be able to answer.

Our group is willing to share in the burden of the national defense program, but the purpose of this tax seems to include other factors than the raising of revenue.

Discrimination against mechanical commercial refrigeration.—It singles out mechanical refrigeration from all other kinds of commercial and industrial machinery such as is used by service stations—air compressors, gasoline pumps, automobile lifts, lubrication equipment, and so forth.

Apparently commercial refrigeration equipment is the only commercial or industrial equipment (excepting auto-

mobile trucks and laundry machinery) on which an excise tax is proposed. No provision is made to tax ice refrigeration even though a good share of it is manufactured with mechanical equipment. Incidentally, this presents another inconsistency in the bill.

A butcher's walk-in cooler may be cooled either by ice or a mechanical unit. In either case the box is the same.

If mechanical refrigeration is used to cool the box the entire installation is subject to the full excise tax. If ice is used no tax is involved. The box itself may well represent two or three times the cost of the refrigerating unit.

Isn't this discrimination of a nature never intended by the committee, and a hardship to the user who does not have ice available?

The bulk of ice used today is manufactured ice. This calls for mechanical refrigerating equipment using parts manufactured by our group. True the ice manufacturer will pay the excise tax on his original equipment which he uses every day in making ice which is, so far, tax free.

This places the ice manufacturer in those sections where natural ice can be cut at a disadvantage in addition to placing the members of our group in a noncompetitive position.

Commercial refrigeration is not a luxury product.—If commercial refrigeration equipment has been included in this bill on the premise that it is in the luxury group of consumer goods requiring sales curbs as an inflation control, we doubt if the proposed application of the tax to our products will accomplish that purpose.

A tax on commercial refrigeration is a tax on food.—A tax on the butcher's walk-in box, the grocer's storage refrigerator for milk, butter, and other perishables, the ice cream dispenser's cabinet, etc., will logically lead to higher consumer prices on the products dispensed from such equipment.

If the intent of the bill is directed toward air conditioning equipment as a luxury item, we respectfully refer to the statement of John W. Hart, beginning with page 206 of your hearings on this bill, which shows a total value for air conditioning items in the bill of approximately 5% of the total refrigeration equipment proposed for taxation.

Surely an entire industry should not be asked to carry an excise tax burden on the strength of a desire to penalize so small a portion of it which may be regarded as non-essential.

If and when you have heard from the manufacturers of air conditioning machinery, we venture that you will conclude that air conditioning itself seems a far more vital function than mere comfort cooling.

Danger of possible pyramiding of this tax.—From the present wording of the bill, it is not clear to us whether this tax on components of refrigerating equipment can be administered without pyramiding the tax as our products move through resale channels. We do not feel that it is the intention to have the act work that way so hope that your committee will see to it that this point is clarified.

If it is deemed necessary to raise extra revenue through an excise tax on food-handling equipment, then we believe that a similar tax should be imposed on all other types of mechanical equipment as previously mentioned.

Instead of an excise tax on products of this nature we feel that a sales tax imposed on the finished product or installation in which components are involved would be eminently more equitable and more economical to administer.

Therefore, it is our recommendation that the proposed excise tax on components manufactured by our group be eliminated, and that, if it is regarded as necessary to raise a specified quota from the mechanical refrigeration industry that the proposed percentage on the finished units

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A Businessman and World War Veteran Visits a New Army Camp

Louis Weiss Discovers an Efficient Colonel and Finds Out Just How the Post Exchange Is Run

Editor's Note: When we learned that Mr. Weiss had visited an Army Camp to inspect an installation of his equipment, we urged him to write his observations on his trip, because we know from past contact that he can give a mighty interesting and human account of his experiences.

His story offers verbal pictures of some phases of Army Camp life and activity that we haven't seen in any of the dozens of accounts of Camp life which have appeared in popular magazines. And he suggests that there is possibly still a market in such Camps for live wire dealers in the Camp area.

By Louis Weiss, President, Ideal Beer Cooler Co.

July 14 and I am scheduled to go to Camp Robinson, Little Rock, Ark. Our distributor, Gibson-Allen Sales Co., wants me to come down to the camp and look over the installation of 39 8-foot beverage coolers which they had completed a month ago.

The camp recently attracted nation-wide attention over the "Yoo-Hoo" incident. While I was hesitating in deciding whether or not to go my 14-year-old son, Marvin, was putting tremendous pressure on me to make the visit and of course he cut himself in on the deal by insisting that he wanted to see the "Yoo-Hoo Division." Of course, he

won out in the long run.

The temperature was 96° F. in St. Louis. Little Rock, where Camp Robinson is located, promised even warmer and more humid temperature.

We boarded the train at 10:30 p.m. in St. Louis and the first disappointment we had was the air conditioning in our compartment; we let a fan circulate all night in order that we might be able to sleep. Sometimes I can understand why private individuals are under-sold in regard to air conditioning capacity, but why a railroad, is beyond me.

We arrived in Little Rock the

following morning with much anticipation. Myself, an ex-service man from the last World War, who hasn't seen a camp since the date of discharge; Marvin has never seen a camp, naturally, both of us were keyed up to the experience that awaited us.

Our first experience was rather disappointing. Mr. Allen, our distributor, was simply nowhere and after waiting 30 minutes we decided we might as well shift for ourselves. At the station we could feel immediately the military atmosphere; soldiers everywhere, some with barrack bags, transferring to other camps in the charge of non-commissioned officers, some of them just arriving accompanied by women folk, evidently mothers, sisters, sweethearts.

There is an information bureau maintained by the camp in the waiting room managed by civilians and they were really kept busy by a host of information seekers. After stating our business we thought it wise to go to camp direct and find our equipment in camp the best we knew how.

We hailed a taxi, which cost us \$2.50 for the trip from the railroad station to the camp. At the entrance of the camp I was immediately brought back to the memories of the old war; same Military Police, same method of entrance greeted us as in the olden days. All the way down I had built a picture in regard to the new Army Camp, but the scene that awaited us surpassed everything that I could imagine. The whole camp looked like a great big city still uncompleted. It has been revamped from what was known in the old war as Camp Pike.

Everything is under construction, everything is new, only the roads showing some resemblance of completion. The streets of different companies are still unfinished and everywhere you look is construction, grading, and new buildings in the act of being finished.

ALL TYPES OF UNIFORMS

From here on nothing is like the old war Army Camps. Soldiers in overalls training everywhere you look. What confused me was the different type caps and hats being worn everywhere you looked. One group wearing smart over-sea caps, others old time regulation caps, and still others with headgear resembling overseas brass hats. You could see the various guards in various make-ups; some of them wearing or carrying the new Garand rifle, some of them again equipped with clips and revolvers.

The only close resemblance to the old Army Camps is that no one can give any information. Remembering that all of our coolers were consigned to the Camp Exchange, we asked for Camp Exchange Headquarters. By this time we were dumped out by the taxi driver, who very wisely deposited us in the middle of the camp, evidently being glad to get rid of us. We passed numbers of civilians, some of them working in camp, some of them riding in automobiles probably bent on selling something.

After much fruitless running around we ran into a little civilian, who represented a candy jobbing house specializing in Camp business, and he graciously offered to take us to the main Exchange of the camp, where we might be able to get some information.

As we arrived at the Main Exchange the picture immediately changed. The building had been divided into two parts: in one part eight or ten civilians bunched together feverishly working typewriters, adding machines, etc., behind a cage resembling that of a bank.

THE 'MAIN OFFICE'

The opposite section is railed off, with the sign of information, where a young lady busied herself with the switchboard and in between times took care of information. Behind her desk were two small private offices and between the cage and information desk was a long wooden bench patronized by five or six civilians asking questions or waiting for something. Later on I learned that these men were all representatives of various firms seeking the Camp Exchange Officer, who was doing the purchasing for various exchanges.

We asked the young lady if she knew Mr. Allen from the Gibson-Allen Sales Co. who installed the beverage cooler refrigeration in all of the 12 exchanges, or a Mr. Bailey, their service man, who was supposed to be around somewhere. With a

Training For the Army Is A Thirsty Job



Soldiers at Camp Robinson rush the counter at a post exchange during one of the two periods in the day that the exchanges are open. Notice beverage coolers under table and apparent preponderance of soft drinks.

friendly smile she told me that she would be able to get Mr. Allen for me in a jiffy. After looking up a number in the phone book, she plugged in getting a number and told me that Mr. Allen was on his way to his office and would be there in 30 minutes. Her remark left me somewhat puzzled for I could not understand where Mr. Allen had an office in Little Rock. However, I thought it possible that he made his temporary headquarters with some service organization.

While I was talking to the young lady I looked into the open doors of the two offices behind her and noticed that at the desk a Major and a Colonel were busily engaged in conversation. In the other office, right next to this one was a Second Lieutenant, who was busy marking papers.

The whole building showed earmarks of a temporary construction for the joists were covered on one side only with a Celotex covering.

Finally the young lady turns to me and tells me that Mr. Allen is on the phone. Imagine my surprise and disappointment when I found that the man who answered me, while his name is Allen, and is evidently in the refrigeration business is not the Mr. Allen that we were seeking. So after two hours of waiting we were right back where we started from.

By this time the Second Lieutenant must have noticed our plight and came out of his office, and with a

winning smile, asked me if he could be of any assistance.

When we stated our business he graciously invited us into his office, evidently noticing the effect of high humidity on us and made us sit down, where a desk fan somewhat relieved our discomfort.

ENTER THE COLONEL

After 10 to 15 minutes the Colonel from the next door office came in and introduced himself as Colonel Alexander, in charge of exchanges, and inquired about our mission. When he learned our purpose he volunteered that he personally would be glad to take us through the 12 exchanges for the purpose of inspection.

He seemed to be the most efficient individual that I have ever seen. While he excused himself for a few minutes he got rid of all the fellows that were waiting for him. He put me in mind of a very efficient Purchasing Agent, plus an all around inspector. While we were waiting for him I noticed that everything went through his hands, the purchasing of various items for the exchanges, which included everything from candy to boxing gloves. He seemed to know prices even without consulting his records.

Everything he did left its mark on me for I had never dreamed that a gigantic business like this could be run so efficiently and seemingly with

(Concluded on Page 3, Column 1)

Allocation Program Set Up For Freon

(Concluded from Page 1, Column 1) for the uses enumerated under Classifications A, B, and C, the residual supply shall be divided among users enumerated under Classification D.

"If it appears, in any month, that the available supply for any Classification is less than the existing demand in that Classification, producers of such refrigerants shall allocate the available supply ratably among the users in accordance with the average month consumption by such users during the period July 1, 1940 to June 30, 1941; provided however that the Director of Priorities of the Office of Production Management may, with the concurrence of the Director of Civilian Allocation of the Office of Price Administration & Civilian Supply, grant adjustments deemed necessary or appropriate upon the application of any producer or user of such refrigerants complaining of inequity or hardship in the allocation within a Classification."

"1335.32 Materials Included. The term 'chlorinated hydrocarbon refrigerants' referred to in 1335.31 hereof means:

Trichloromonofluoromethane
Dichlorodifluoromethane
Dichloromonofluoromethane
Trichlorotrifluoroethane
Dichlorotetrafluoroethane*

"1335.33 Classification by Users. The Classifications referred to in 1335.31 shall be as follows:

"Classification A: Maintenance of refrigeration equipment already installed.

"Maintenance of air conditioning equipment already installed in hospitals, clinics, and sanatoria.

"Classification B: Maintenance of industrial air conditioning equipment already installed.

"Classification C: Maintenance of air conditioning equipment already installed, not included in Classifications A and B.

"Classification D: Manufacture of

new refrigeration equipment. Manufacture of new air conditioning equipment.

"The Preference ratings for chlorinated hydrocarbon refrigerants provided for in this Civilian Allocation Program shall supersede any conflicting preference ratings or specific allocations of chlorinated hydrocarbon refrigerants created under other Civilian Allocation Programs."

"1335.34 Avoidance of Excessive Inventories. Preferences granted under this program shall not be used to accumulate excessive inventories."

"1335.35 Enforcement. The foregoing program is to be administered and enforced by the Office of Production Management."

"1335.36 Effective Date and Expiration. This program shall take effect on Aug. 15, 1941 and shall, unless sooner terminated by the Administrator expire on Dec. 31, 1941."

*1335.31 to 1335.36, inclusive, issued pursuant to the authority contained in Executive Order No. 8734.



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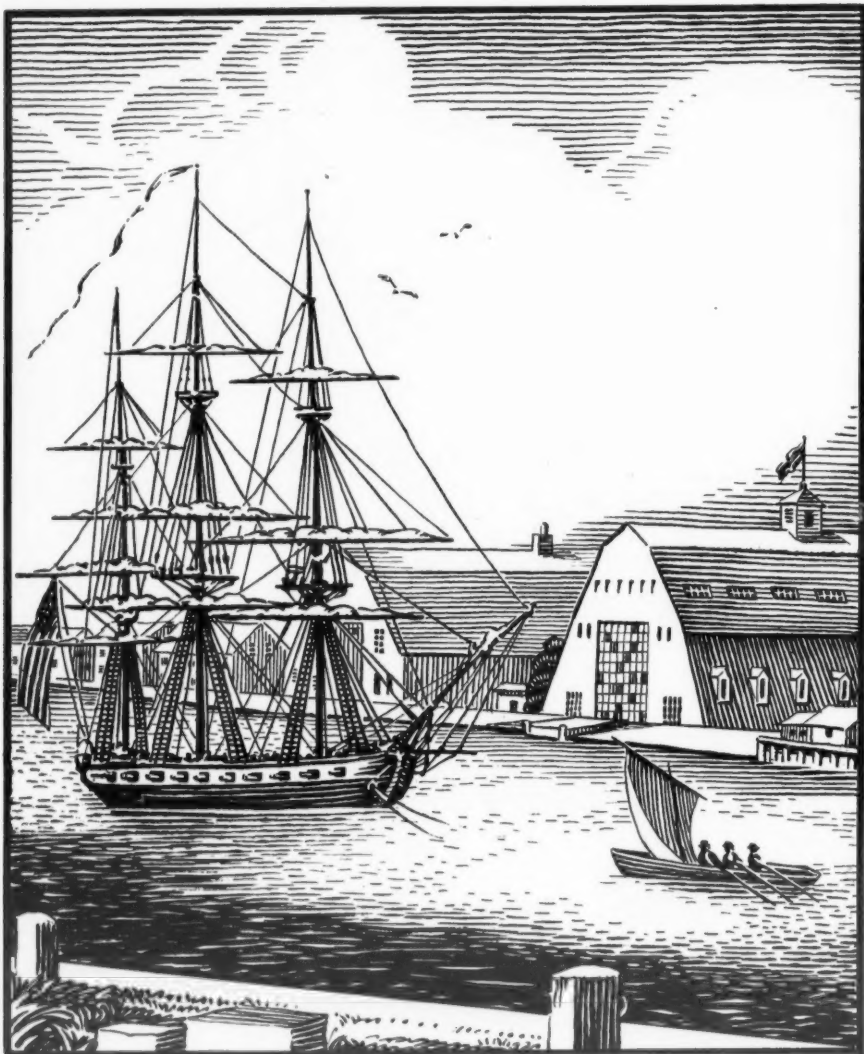
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Army Post Exchanges Dispense An Amazing Amount of Bottled Beverages Daily

(Concluded from Page 2, Column 5)
very little effort. It certainly dispelled my pre-formed ideas of Army waste and inefficiency.

Later on I learned that Colonel Alexander had been a buyer in civilian life; his family having 15 retail stores with him taking care of the purchasing. Of course, this accounted for the all around efficiency that had made its mark on this gigantic organization.

In the meantime our Mr. Allen arrived and the Colonel took us around from exchange to exchange; with him inspecting all of the exchanges, we, our coolers. It was astonishing to see and hear his suggestions in regard to merchandising, keeping system and order. What interested me most was the enormous business these exchanges were doing and in the manner business is handled.

The exchanges open up at 11 a.m. and close at 2 o'clock p.m. They empty all four beverage coolers in each exchange in this short time, amounting to about 225 cases dispensed in this three hours. Then the exchanges open again at 6 o'clock and remain open until 11 o'clock.

Commenting on this "crazy" business the Colonel proudly remarked that he has netted \$25,000 clear on the 12 exchanges in the month of June.

EXCHANGE PERSONNEL

All of the personnel in the exchanges consist of civilians employed by the Colonel's office. Each exchange has its own steward, also a civilian. The whole business reminds you of a well organized department store without floor walkers and sales ladies. The only men in uniform connected with this enterprise are the Military Police, who collect the money from the exchanges taking it to headquarters.

The exchanges also carry the earmarks of being new; a long bar on one side, store counters on the other side and shelving all around, just like a regular general store. The shelves are jammed with merchandise of every variety. A barber shop is in one end and a combination laundry and cleaning office in the other.

The one exchange where we spent the most time was Exchange No. 2, which has a reputation of serving more men than the other 11 exchanges. This is due to the number of companies that each exchange serves. Incidentally, I learned that this exchange caters to 2,200 men.

Most of the beverages handled are soft drinks, but beer in cans is also available; no draft beer. The method of merchandising and the policy of keeping open varies in different camps. It is at the discretion of the Camp Exchange Officer.

I suggested to the Colonel to cut grilles in the bottom of the counter so the compressors could get more air and also the condensers could be cleaned from time to time so that they would perform to their full efficiency. Ten minutes later a civilian carpenter appeared carrying out the suggestion of cutting openings in the counters and putting extended metal wire over the squares.

Then the Colonel excused himself, sighting additional business, and went back to his main exchange while we stood around taking in more of the atmosphere. By this time the exchange doors were thrown open for business which really resembled a stampede. Enlisted men, non-commissioned officers, and officers of all ranks, swarmed all over the room and practically stormed the counters; some of them carrying their drinks to the middle of the room and sitting down at long tables.

BUSINESS IS RUSHING

I counted 32 of these long tables, with long benches on each side, 64 altogether. They never stopped until 2 o'clock when they closed the doors. Then they reload the empty coolers and get ready for the evening business which turns out to be a continuation of the morning session.

I also learned that the only refrigeration in this camp besides our beverage coolers is one small ice cream cabinet in each exchange. Outside of this there is absolutely no other mechanical refrigeration; none in the Mess Halls or in the commissaries. It seems to me that some local refrigeration companies are

overlooking a lot of potential business in Army Camps considering that they have to feed 22,000 men.

I also had an interesting experience while they were cutting out the counters, to let air to the compressors; a First Lieutenant displayed more than casual interest toward compressors. From the trend of his questions I could sense the refrigeration man. After a few minutes parleying I asked him if he knew refrigeration and he laughingly remarked that in Omaha, Neb. he was selling refrigeration for a number of years prior to joining the Army. He volunteered information that he knows at least two more officers in camp who graduated from the refrigeration business into the Army.

By this time we felt that we had seen enough and could hardly wait to get back to the hotel where we could at least enjoy an electric fan.

We looked up the Colonel again, thanked him for his obliging courtesy and left Camp Robinson with a lasting impression in my mind.

Rolf Nugent Given Place on Credit Control Board

WASHINGTON, D. C. — Rolf Nugent, director of consumer credit studies for the Russell Sage Foundation, has been named by Leon Henderson, OPACS administrator, as his alternate on the committee to coordinate work of the Federal Reserve System with other government agencies in connection with regulation of consumer credit.

The executive order on regulation of consumer credit provided for creation of a committee consisting of the Secretary of the Treasury, the Federal Loan Administrator, and the OPACS administrator, or such alternates as each shall designate, to facilitate the coordination of the board's functions "with other phases of the program for national defense and for protecting the national economy."

Dr. Nugent is the author of "Consumer Credit and Business Stability," published in 1939 by the Russell Sage Foundation. In that study Dr. Nugent proposed federal control, through the Federal Reserve System, of down payments and liquidation periods for installment purchases as a means of promoting economic stability and minimizing the destructive potentialities of consumer credit fluctuations.

"Changes in installment credit terms," Dr. Nugent wrote in the pre-defense study, "would have certain distinct advantages over the presently available weapons for maintaining economic stability. As compared with public spending, the control of installment terms represents a highly flexible device. Terms could be modified very promptly in response to changes in business conditions, thereby avoiding the lag inherent in public spending programs requiring legislative appropriations."

"As compared with monetary controls available to central banks, changes in installment terms would exert a more prompt, more direct, and more readily measureable check upon demand."

A native of Pennsylvania, Dr. Nugent was graduated from Amherst and secured his doctor of philosophy degree from the new school for social research. He worked with Leon Henderson for the Commonwealth of Pennsylvania in the early '20's, became Mr. Henderson's assistant when the latter was appointed director of the department of consumer credit studies for the Russell Sage Foundation, and succeeded to that position when Mr. Henderson entered government service in 1934.

George Ewing Joins Staff of Foxboro's Houston Office

HOUSTON, Tex. — George B. Ewing, Jr. has joined the sales engineering staff of the Houston office of the Foxboro Co., measurement and control instrument manufacturer.

Ordinary Steel Replaces Aluminum In Aviation Parts Made By Crosley

CINCINNATI—Ordinary steel will be substituted for aluminum and special alloy steel at no sacrifice in weight and strength, with a saving of many tons of aluminum, in aviation equipment to be manufactured for the U. S. Air Corps by Crosley Corp., following development of new manufacturing processes by Crosley research laboratories.

Two additional contracts, totaling about \$1,200,000, have been awarded to Crosley, making five jobs recently given the firm by the Air Corps.

Instead of aluminum die castings and chrome molybdenum forgings formerly required in making this aviation equipment, Crosley research engineers have demonstrated that it is possible to substitute steel drawings and steel punchings, processed by hydrogen brazing, resulting in even a slight saving in weight as compared with the material formerly used, according to Lewis M. Clement, Crosley director of engineering.

Walter Beck Co. Opens New Hotpoint Dealership

WEBSTER GROVES, Mo.—Walter Beck Co., Hotpoint appliance dealership, has opened a new store at Forsythe and North & South Roads. The store will include separate display rooms.

Small Motors Placed On 'Critical' List

WASHINGTON, D. C.—Fractional horsepower electric motors have been put on the Priorities Critical List, according to an official revised list just made public by the Office of Production Management (OPM).

The Priorities Critical List is a list of items on orders for which Army and Navy contracting officers may automatically assign preference ratings.

Items which appear on the list are subject to priority regulation only in the sense that Army and Navy orders may be assigned preference ratings so that delivery dates may be met.

Armstrong Cork Domestic Sales Hit 6-Month Peak

LANCASTER, Pa.—Domestic sales by Armstrong Cork Co. for the first six months of 1941 hit a new peak, totaling \$37,481,591 and representing an increase of 36% over the corresponding 1940 period.

The firm's financial report shows a net profit for the first half of the year from operations within the United States of \$2,492,281, after tax reserves, equal to \$1.69 a share. This compares with \$2,114,655, or \$1.42 for the same period last year.

Reserves for federal taxes were \$2,918,749, against \$455,000 last year.

Consumer Goods May Get Steel as Defense Needs Are Supplied

PITTSBURGH—Specified curtailments of sheet, strip, and other forms of steel applying to consumer goods manufacturers after the metal goes under full mandatory priority control on Sept. 1 may be adjusted up or down by the ebb and flow of vital materials to defense channels, according to expert opinion here.

The trend in all civilian groups using sheets and strip will probably be "toward conservation to be achieved not only through reduced steel receipts but also in design of consumer products."

Opinion of observers in the field here as to what tonnage is likely to be available when the priorities order becomes effective is conflicting. Some opinion inclines to the view that all-out production, for a temporary period, will totally eclipse all business outside the priority group while other predictions favor the view that civilian sheet and strip consuming industries will not be left entirely "out in the cold," contending that the more accurate classification of priority tonnage will eventually clarify the non-defense picture.

It was noted that since the priorities order was announced, it has been virtually impossible for civilian users to get acceptance of any new tonnage without priority rating partly because producers have been unable to set up any definite schedules of production or deliveries.

There Is No Substitute For Experience



Servel's factory operations cover 54 acres at Evansville, Indiana.

MORE THAN PRODUCT . . .

SERVEL has always built a sound, dependable product—but that alone is not enough!

If dealers and distributors are to succeed in the face of today's vigorous competition, the factory must supply help in selling, in engineering, in service. It must supply practical assistance that leads to more sales at less cost, more growth with less risk, more profit with less worry.

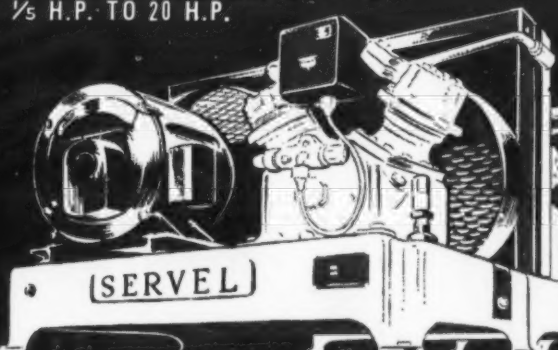
And the factory must go even further than that. It must anticipate selling trends and new markets so that the product and the sales technique keep abreast of the times.

For years, Servel has recognized all these needs—and met them!

By means of printed manuals and sales promotion material—through a staff of trained sales engineers in the factory and the field—through periodic meetings and conferences—Servel helps its customers to get more business and bigger profits.

For full particulars about Servel's keyed-to-the-future sales policy, write today to Servel, Inc., Electric Refrigeration and Air Conditioning Division, Evansville, Indiana.

OVER 80 STANDARD MODELS—
AIR-COOLED AND WATER-COOLED
1/2 H.P. TO 20 H.P.



SERVEL
COMMERCIAL REFRIGERATION
and
AIR CONDITIONING

Boost In Michigan Copper Production Seen If Gov't Buys Associated Plant to Join Navy & Army

DETROIT—An increase of approximately 50% in Michigan's Copper Country 1940 output of 90,200,000 lbs. and reopening of several old mines was predicted by B. F. Noetzel, manager of the Isle Royale Copper Co., at Houghton following announcement of Federal Price Administrator Leon Henderson's recommendation that the government purchase of the entire productive output of high-cost copper producing areas.

(Mr. Henderson estimated that more than 90% of the present domestic output could be produced for 12 cents or less, and said that high-cost copper would be bought through the Metals Reserve Co., sales to which were exempted from the ceiling. This latter factor is an especially established government agency.)

Mr. Noetzel said he believed that at least five old shafts in the Hancock-Houghton area, and possibly others north of Calumet, would be reopened immediately. Michigan copper company officials are reported to be confident that the output of older shafts will be needed, basing this belief on estimates that the copper shortage for defense needs would run to 400,000 to 500,000 tons instead of 150,000 tons estimated earlier.

Representatives of the Arizona Small Miners Association are said to have registered complaints with the government against being allowed only a one-cent differential over costs under the copper program.

PHILADELPHIA—Certain changes have been announced in the executive personnel of Associated Refrigerator Plant, Inc., refrigerator rebuilding plant and distributor of the National Refrigerator Market Report, Inc. (the refrigerator Blue Book).

Andrew J. Asch, Jr., a former executive of the company, has announced that because of pending call to active duty as second lieutenant, quartermasters corps, United States Army, he has sold his interest in Associated Refrigerator Plant to Martin Spector, treasurer of the firm. He retains his interest in National Refrigerator Market Report, Inc.

Edward Siegel, having been called to active duty as an ensign in the United States Navy, has sold his interest in Associated Refrigerator Plant, Inc., but retains his interest in National Refrigerator Market Report, Inc.

Herman Hantober is directing the company's affairs in the position of president. Marvin I. Hirsch was recently appointed vice president in charge of sales.

Mr. Hirsch comes to Associated Refrigerator Plant from Spiegel, Inc., Chicago mail order house, where he served for 5 years as an executive in the advertising research and merchandising departments.

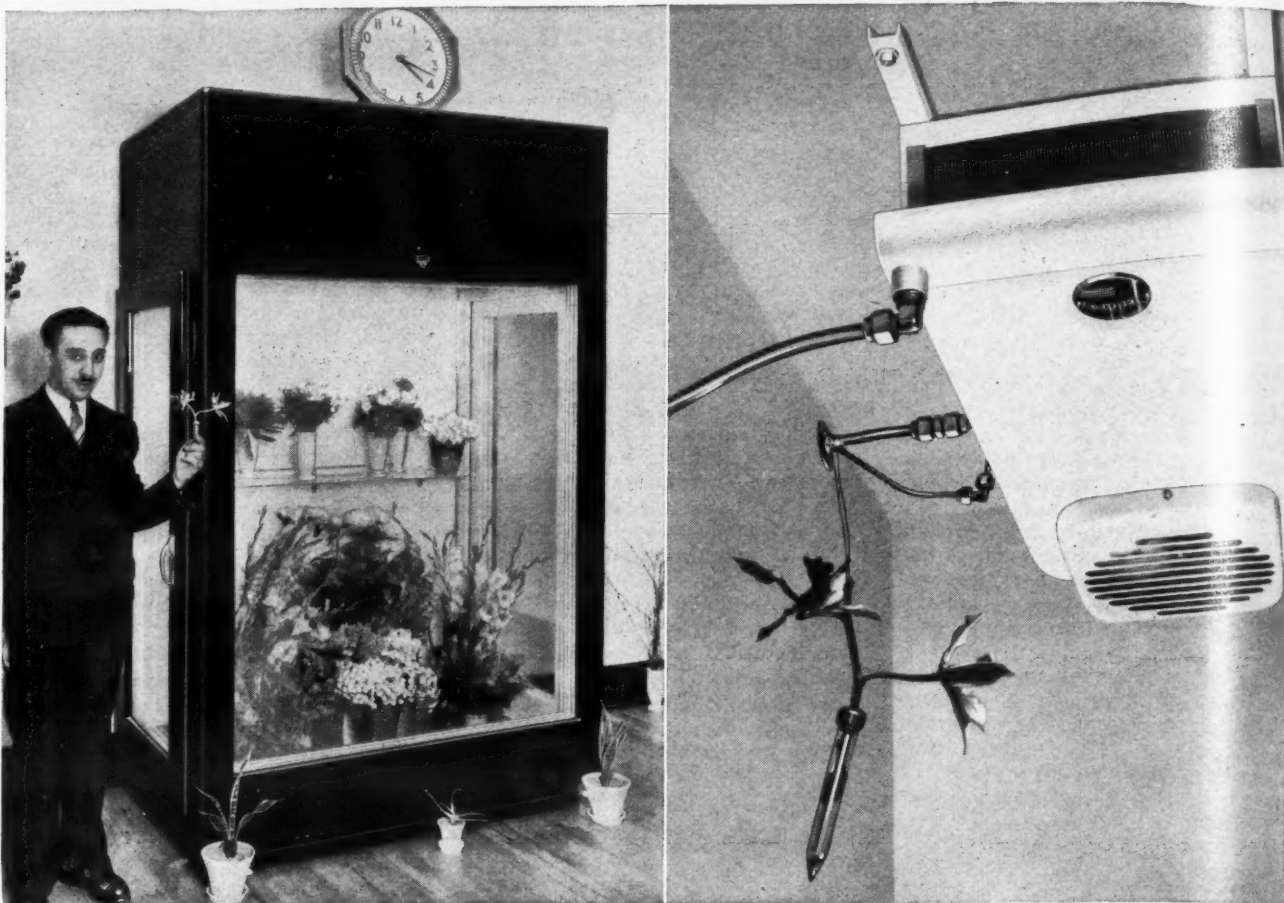
Rumor Says Exports Get High Priority

WASHINGTON, D. C.—If unofficial reports that goods for export have been given a priority rating immediately ahead of the needs of the Office of Price Administration & Civilian Supply are true, many orders for manufactured goods now being held in the offices of export houses can be filled from raw material stocks available after the demands of the ranking priority divisions are met.

The reports, unconfirmed but considered accurate by exporters, say that officials here have drawn up a list of the relative importance of various divisions to which material will be allocated. This list is said to rank Army and Navy needs first, defense manufacturing second, Lease-Lend requirements third, the Office of Production Management fourth, export fifth, and OPACS sixth.

First consideration will be given to Latin-American governments.

Most Delicate of Flowers Needs Delicate Control



(Left) John R. Kasting of the University Florist Shop, Buffalo, holds two fresh spray orchids taken from his Meyer Smith flower cabinet equipped with a Fedders ceiling unit cooler. The refrigeration equipment kept the flowers saleable for more than 75 days. (Right) Closeup of unit cooler and spray orchids.

Temperature Variation Must Be Under 1° For Orchid Storage

BUFFALO—Importance to the retail florist of accurate, unvarying temperatures for storage of delicate blooms is illustrated by the experience of John R. Kasting of the University Florist Shop here, who has kept two orchids in salable condition for almost three months with the aid of modern refrigeration.

It was on April 11, the Friday before Easter, that Mr. Kasting placed the two orchids in his display refrigerator for safe-keeping. To keep the delicate blooms in top condition, it was necessary to maintain a temperature inside the case of 46° F., with less than 1° variation either up or down. Any variation would have an immediate and unfavorable effect.

After 75 days' storage, the orchids were still in prime condition, Mr. Kasting reports. The case was equipped with a Fedders "Fed-R-Cooling" unit cooler, and both cabinet and unit were sold by Meyer Smith Co., Inc., of Buffalo.

Time Switch Handles Single Cycle Jobs

CHICAGO—International Register Co., manufacturer of coin meters for electric refrigerators and timers for electric ranges, has just introduced a line of standard time switches (Model TS-41) designed to meet a variety of single cycle applications such as controlling signs, window lighting, flood lighting, attic ventilating fans, etc., where only one "on" and "off" operation is required in any 24-hour period.

Timing range of the unit is anywhere between 15 minutes and 21 hours, and the switch may be turned either off or on manually whenever desired, regardless of time settings. Time cycle is resumed automatically. Time dial is conveniently located, with setting visible through a window in the cover. The unit may be used either indoors or outdoors, but in the latter instance must be encased in a protective housing.

Loman Co. Doubles Its Product Display Space

ASHEBORO, N. C.—H. L. Loman Plumbing & Heating Co., Hotpoint dealership operated here by Henry Loman, has about doubled its display space by cutting through the wall of its old location and taking over the space formerly occupied by Teel Electric Co.

Cooled Display Case For Packaged Liquor Wins Texans' Favor

DALLAS, Tex.—A step-up of approximately 25% in sales following installation by the Hussmann-Ligonier distributor here of a refrigerated display case is reported by the operator of a package liquor store which, along with the drug store handling the same line, is becoming an increasingly active buyer of display cases in the 5 and 6-ft. sizes.

Retail grocers who cater to the liquor trade also are turning to the refrigerated display as a means of materially boosting sales volume.

The Jack Langston Co. made one of the latest installations here when it installed one of its 5-ft. boxes in the Model Drug Store.

This trend to the chilling of wines and liquors which is compelling dealers to fall in line is said to have started here several years ago when one of the leading package stores undertook to boost sales by means of an advertising campaign built around the use of cold liquors.

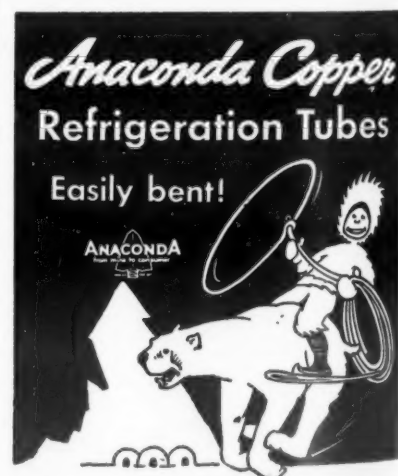
Refrigeration Contracting Firm Organized

THORP, Wis.—Central Refrigeration Co. has been organized here to carry on a general contracting and engineering business in all branches of refrigeration and air conditioning. W. F. Nolechek, M. J. Breitenstein, and J. L. Terrell are co-owners.

New Book Covers Use Of Vacuum Plates

CHICAGO—Applications of Dole vacuum cold plates for the preservation of all types of perishables are outlined in the new catalog, No. 22, recently issued by Dole Refrigerating Co. here. Cover is printed in silver on dark blue leather finish stock. Patented ring binding device permits easy insertion or removal of pages.

Complete catalog contains 10 sections, covering: cold facts, ice cream cabinet conversion units, soda fountains and liquid coolers, hardening rooms, truck and trailer refrigeration, locker rooms, display cases, food counters, and bottle coolers, beverage coolers, computing plate sizes, and a sectional index.



THE AMERICAN BRASS CO.
FRENCH SMALL TUBE BRANCH
General Offices: Waterbury, Conn.

YOU DON'T HAVE TO BE CLOSE TO MARINETTE ... THERE'S ALWAYS AN ANSUL JOBBER NEAR YOU!

Wherever you are in the United States you'll find there's an Ansul Jobber near. Conveniently located, amply supplied with adequate stocks of Ansul products, this Jobber is ready to serve you better. We are proud of these Jobbers. You will be pleased to discover why.

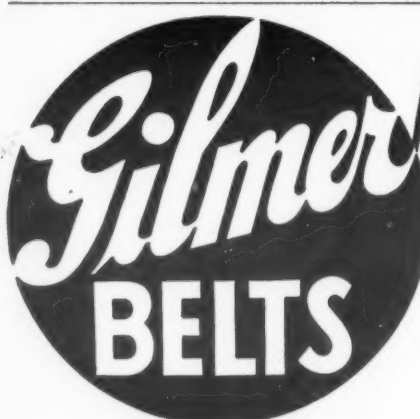
ANSUL TWINS
SULPHUR DIOXIDE METHYL CHLORIDE
Agents for Kinetix's "Freon-12"

HANDY-SIZED CYLINDERS FOR THE SERVICE MAN
Three sizes of Ansul refrigerant cylinders are especially useful to the service man—15, 40, and 60 lbs. for Methyl, 25, 70, and 100 lbs. for Sulphur.

If you do not know the name of the Ansul Jobber near you, write us for his name and address today.
ANSUL CHEMICAL COMPANY • MARINETTE, WISCONSIN



Mills Condensing Units
By Mills Novelty Company
4100 Fullerton Ave., Chicago, Ill.



for V-belt installations
are sure profit makers

YOU'RE sure of profits with Gilmer V-Belts because there's a Gilmer exactly right for every V-belt replacement.

You can service all models and makes of electric refrigerators, beer pumps, bottle coolers, milk coolers, washing machines, compressors and other belt-driven equipment... Find the right belt in a few seconds by (1) looking it up in "America's Belt Bible," the 1941 Gilmer Catalog; or (2) measuring with a Gilmer Handimeter.

And you're sure of repeat profits, too, because Gilmer V-Belts are tough and durable, last longer and run more smoothly. See your Gilmer jobber today.



Send for your FREE 1941 "Belt Bible" NOW!

L. H. GILMER COMPANY
TACONY, PHILADELPHIA, PA.

Rush me a copy of your 1941 catalog—"America's Belt Bible."

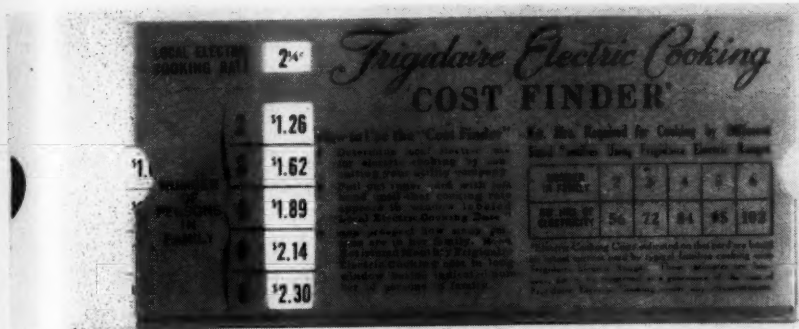
NAME _____

ADDRESS _____

CITY _____

STATE _____

Electric Cooking Costs at a Glance



Above is the electric range and at the left the water heater calculator devised by Frigidaire to help dealers and salesmen answer the "how much will it cost to operate" question.

Handy 'Cost Finders' Take Mystery Out of Range, Heater Selling

DAYTON, Ohio—What size water heater does a customer need? What would be its operating cost? What would it cost to operate an electric range in a family of four persons?

Answers to these and similar puzzles to appliance salesmen are provided by a couple of handy little calculators recently devised by Frigidaire, one for electric water heaters, the other for ranges.

Both calculators are similar in size and appearance, and both are easy to operate, it is said. Each one consists of a celluloid cover and a slide which fits into it, the assembly being about 7 inches long and 3½ inches wide.

The water heater calculator, somewhat more comprehensive than the range cost finder, must be used in conjunction with a personal survey form in which is recorded the approximate number of tub and shower baths a family takes; the amount of dish washing, hand washing, shaving, and the extent of household and infant laundry.

The survey form gives the approximate number of gallons used for each function, and this is totaled. Then the salesman pulls the slide from the calculator until that total figure appears at an aperture in the envelope. Corresponding windows reveal which model heater is needed.

By means of a table printed on the calculator, the salesman is enabled to arrive at the approximate monthly cost of operating the heater. Reverse side of the calculator has a cut-away likeness of the water heater drawn on it, enabling the salesman to show how the heater operates.

The range cost finder is comparatively simple. Manipulation of the card reveals, through apertures on one side of the celluloid covering, the monthly cost of cooking on a Frigidaire electric range, depending on the number of persons in the family and the local electric cooking rate. Reverse side shows the basic and plus features of every model range.

Both calculators are being made available to Frigidaire retailers.

Average Washer Buyer Earns \$1,560 Yearly, Survey Reveals

CHICAGO—Average purchaser of a household washing machine in 1941 is from a family with an average annual income of \$1,560.27, according to results obtained in a survey just completed by American Washer & Ironer Manufacturers Association. Some customers are from families with yearly incomes as low as \$583.32, the study by the association revealed.

The survey was compiled from reports of dealers to 12 washer manufacturers, all members of the association, and covers 1,712 purchasers of 1941 washers located in 25 states representing all sections of the country.

Highest purchasing power was indicated in a group of 90 customers reported by one dealer, whose incomes averaged \$3,692, the survey showed. Next highest were 13 customers of another dealer, with an average income of \$2,132.20. Lowest were 21 customers, with average yearly incomes of \$708.48, and nine averaging \$583.32, according to retailers' reports.

In indicating that buying of household washers is concentrated in the lower income levels, the survey's results follow closely another market analysis made recently by one manufacturer, whose study showed that more than 60% of 2,000 recent purchasers had annual incomes of less than \$1,500.

Cut-Price Advertising Barred By Bendix

SOUTH BEND, Ind.—Bendix Home Appliances, Inc. has notified all distributors that effective Aug. 11 all display and classified advertising run on Bendix home laundry equipment must be run at established list prices.

The action is being taken, it was said, because the type of classified advertising being used by some dealers has tended to create the impression that there is no established list price for this type of merchandise.

The factory intends to police Bendix advertising in all newspapers throughout the country, it was said, and dealers who violate the request may lose their franchises on this equipment.

Appliance Stocks Moving Fast In New York Area

NEW YORK CITY—With orders from local retailers continuing to pour in, supplies of refrigerators and other major electrical appliances seldom remain in the warehouse longer than one day, appliance distributors here report.

Situation in this area may be different from most others, however, it was said, in that most retailers in New York City do not maintain large stocks of such products as refrigerators, preferring instead to merely have complete floor samples and have deliveries made from the distributor's warehouse direct to customers.

'Difficult' Dealers In For Tough Time Under Appliance 'Rationing' Set-Up

NEW YORK CITY—Weeding out of those dealers who in the past have consistently flouted the requests of manufacturers on price maintenance and other practices or who have made products available to discount houses is now under consideration by the major appliance industry, according to a news story in the business section of a recent issue of "The New York Times."

"That such a plan will be undertaken is not doubted by distributors who can now afford to get rid of accounts which in the past have provided them with headaches," the article says.

'WEEDING' HAS STARTED

Such action has already been taken by one radio manufacturer who dropped 250-odd accounts prior to instituting a strict price maintenance program. This company suspected, according to the "Times" article, that the dealers in question would not go along on price maintenance and solved the problem by cutting them off, thereby enabling it to allot a greater portion of its radios to "reliable" accounts than would have been possible if the 250 were retained.

It is predicted that since the radio industry is the first to bring out 1942 models, it will probably serve as a pattern for other industries in the consumers' durable goods field, which is threatened by severe production cuts.

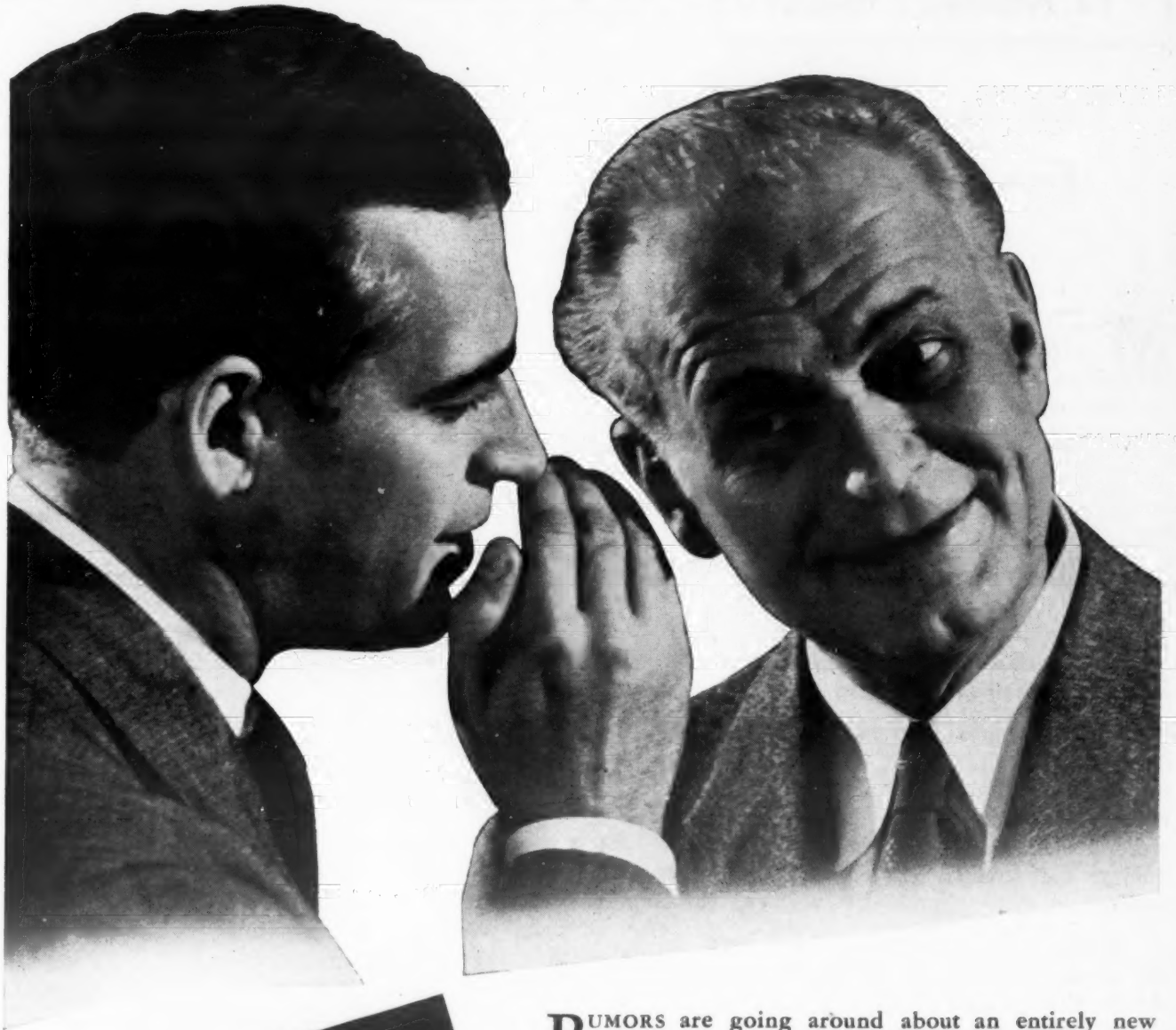
"This situation may well prove to be a serious one for small dealers,"

the article comments. "The loss of a certain line of products would not be too serious in itself under ordinary circumstances but in the current situation it may result in a small store being forced out of business. It may be unlikely, for instance, that a company will be able to get another line of radios if it has been tagged as a chronic price cutter. In addition, suppliers of other products may believe that this curtailment of a store's sales potentialities may affect its credit and thus refuse to ship."

"From present indications it would seem that stores, which in the past have been able to exist through the manufacturers' need for selling to every possible outlet, are due for a difficult period when manufacturers no longer need them."

Six-Month Stoker Sales Double Those of 1940

WASHINGTON, D. C.—Showing a sharp gain over the 37,467 units sold in the first half of 1940, sales of mechanical stokers in the first six months of 1941 rose to a total of 67,308 units, according to statistics released by the Department of Commerce. This year's figure is more than double the 26,990 units for the comparable 1939 period. June sales totaled 21,787 units, compared with 14,371 in May and 10,055 in June of last year.



"... have you heard what Wood Conversion is doing?"



WOOD CONVERSION COMPANY

DEPT. 193-8, FIRST NATIONAL BANK BUILDING, ST. PAUL, MINNESOTA

MANUFACTURERS OF BALSAM-WOOL AND NU-WOOD INSULATIONS

RUMORS are going around about an entirely new refrigerator insulation system, developed by Wood Conversion Company. Because of this company's outstanding reputation for pioneering important advances in the insulation field, speculation has been rife about "what the manufacturers of Balsam-Wool and Nu-Wood are doing."

It's true—we have developed an outstanding new insulation system which industry will welcome and which will be ready for announcement shortly. Meanwhile, if you want to get the facts while they are still in the "whispering stage"—write us! We'll gladly send a representative who will present an interesting visual story of the new process. We think you'll learn something to your advantage!

'Young Defenders' Study Modern Methods



Instruction in modern electric cooking is a part of the program of the Detroit Young Defenders, an organization of 300 school children who are being schooled in activities useful in the national emergency. Here Arthur H. Kitson, Norge electric range and water heater sales manager, demonstrates to one class how to broil a steak the modern way. The youngsters also are instructed in motor assembly and repair, first aid, home nursing, sewing, safe driving, and a variety of other arts.

Air Conditioning & REFRIGERATION NEWS

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F. M. COCKRELL, Founder

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AUGUST 27, 1941

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Refrigeration Is Essential To America's Health

This Is a War For Foreign Trade

MANUFACTURERS and jobbers who have been experiencing difficulties getting materials have reported some strange and disturbing tales. These tales always begin with:

"I don't like to seem unpatriotic, and I'm in favor of aid to Britain, but..."

This department, too, yields to none in its admiration for the British. They are a truly marvelous race; and, in international affairs, are undoubtedly the smartest people on earth.

We have several dozen subscribers in England—still. The writer has a number of good personal friends on that wonderful island—friends who were hospitable in the grand manner during his sojourn there. We have never met finer people.

What's more, we hate Hitler and all he stands for, and we believe that the British will go down in history as the most valorous of men for their heroic stand against Hitler's horrible hordes.

But...

LET'S ENTER OUR SACRIFICES ON THE LEDGER

It does seem proper that some of the facts about Lend-Lease be brought out into the open. The sacrifices which we—and our industry in particular—are being called upon to make, should be recorded. Never again do we want to hear America called "Uncle Shylock."

Americans are great idealists. They are probably the last idealists on earth. Others can't afford idealism. When we go to war, it will be for a set of slogans; for "democracy, freedom, preservation of our way of life,

destruction of slavery and tyranny," etc. We are like that.

The British are much more realistic. They are fighting a war for foreign trade. Like the Germans, they must "export or die." They are waging this war on two fronts:

- (1) By fighting their most challenging competitors.
- (2) By maintaining their foreign trade.

This, then will help explain some of the advantages which they have taken with regard to the billions of dollars worth of free goods which they are getting from us under the Lend-Lease Act. They aren't to be blamed for this. They are simply smart, whereas we are simply idealistic.

SUBSCRIBERS ARE INDIGNANT OVER LEND-LEASE RESULTS

Here are some of the things which indignant American subscribers are reporting to us:

If you are having trouble getting scarce materials, such as zinc, contact the British Purchasing Commission. They may be able to sell you what you need—either off the docks from Lend-Lease stockpiles, or shipped over here from Britain.

Whereas shortages of aluminum and copper are forcing some refrigeration manufacturers to close their doors, and others to shut off exports of refrigeration supplies and parts, British refrigeration manufacturers are expanding their export trade in such items to supply our former customers.

Importers in New Zealand, Australia, and South Africa are writing critical letters to American manufacturers over the inability of the latter to continue their regular shipments.

"We are getting everything we want from Britain," they write. "If they can continue to manufacture and ship despite the bombings, why can't you Americans fill orders? British prices are too high."

BUSINESS AS USUAL WITH BRITISH EXPORTERS

The sorely-pressed American commercial airlines recently had to turn over to the British 103 transport planes. Yet the British are expanding their own commercial airlines. So are the Dutch.

Recent news dispatches have told of a coming shortage of canned red salmon in the United States because the British, who are getting huge shipments of salmon from us free, don't like pink salmon—of which we have a surplus. The British Food Ministry is also complaining that the free pork we have been sending them is "too heavy." They want lighter, leaner meat—which is always scarce here.

It is also noted that our shortage of glycerine is caused by the free glycerine we are sending England—not to be used in bombs to drop on Hitler—but in explosives to blast out gold from South Africa.

We buy all the gold they send us—at the outrageous price of \$35 an ounce (it costs from \$11 to \$16 an ounce to mine). For eight years we have been buying enormous quantities of useless gold from the British at this extortionate price (a price established by the U. S., by the way!). It has paid for much of what re-arming Britain has done.

One of our subscribers sends us a

They'll Do It Every Time By Jimmy Hatlo



copy of the following telegram, with the request that we print it:

Mr. John Fry, Chairman, Gas Industry Committee for Defense Cooperation, c/o Detroit-Michigan Stove Co., Detroit, Michigan.

MANUFACTURERS OF LP-GAS EQUIPMENT AND APPLIANCES ARE THREATENED WITH THE NECESSITY OF CLOSING THE DOORS AND FORFEITING THEIR BUSINESS BECAUSE OF INABILITY TO PROCURE STEEL AND OTHER MATERIALS. SOME MANUFACTURERS ARE WORKING WITH ONLY A TWO OR THREE WEEKS' SUPPLY OF STEEL WITH NO ASSURANCE OF FUTURE DELIVERIES. IN SPITE OF THIS PRECARIOUS DOMESTIC SITUATION BRITISH MANUFACTURERS SEEM ABLE TO CONTINUE TO SUPPLY NOT ONLY THEIR DOMESTIC BUT THEIR EXPORT TRADE. PLEASE REFER TO ADVERTISEMENT, PAGE 16 OF THE GAS TIMES OF JUNE 21, PUBLISHED IN LONDON, WHICH READS "DESPITE THE DEMANDS MADE UPON US BY THE WAR THE OUTPUT OF OUR PATENT GAS WATER HEATERS AND STORAGE SETS IS FULLY MAINTAINED FOR BOTH HOME AND EXPORT MARKETS." AN ENGLISH MANUFACTURER OF METERS, IN A FULL PAGE ADVERTISEMENT IN THE GAS TIMES MAY 25 PAGE 15 STATES, "NOW WE ARE ONCE AGAIN ABLE TO GIVE DELIVERY THAT IS AS GOOD AS THE METERS THEMSELVES." PHOTOSTATS OF ADVERTISEMENTS BEING AIRMAILED. THE SERIOUSNESS OF THIS SITUATION CANNOT BE OVER-ESTIMATED. I HOPE YOUR COMMITTEE WILL BE ABLE TO SECURE APPROVAL FOR SUPPLIES TO OUR MANUFACTURERS FOR NORMAL TRADE AT LEAST EQUAL TO THAT BEING RECEIVED BY BRITISH MANUFACTURERS.

JAY JENKINS, Publisher
Butane-Propane News

NO DOUBT IT'S ALL FOR A 'GOOD CAUSE'

As stated earlier, this information is printed without comment, merely for the record. So long as the present Administration is in office, and so long as some of the rest of us continue to state that "Britain is fighting our war," whatever Britain does with the materials we are giving her is for the benefit of a "good cause."

Calmer Americans, however, will note that fundamentally this is a war for foreign trade, and that after the war the victor in Europe will be our chief competitor.

HOW WE ARE LOSING OUR FOREIGN TRADE

We hope that the victor will be England. The Germans, we feel, aren't gentlemen. We'd rather compete with the British, who are gentlemen. But under the way the Lend-Lease Act is working out, the British are stealing a long march on us for the export trade. See how:

(1) By taking materials away from our exporting manufacturers, they are forcing those manufacturers to go out of business. Many of them may never come back, and hence will never again compete with the British exporters.

(2) By continuing their own manufacturing for export, they are taking over our former customers whom we are no longer able to supply. Because the British are so much better at keeping export customers than we are, we may never get those customers back.

WHEN AN AMERICAN FIRM CLOSES ITS DOORS, ITS PEOPLE HAVE LOST THEIR 'WAY OF LIFE'

In terms of the overall picture, these items may be petty. (Although when an American manufacturer has been forced out of business because of a shortage of materials, both he and his employees have lost their "way of life.") It perhaps is true that we like and admire the British so very much, and detest the Germans so thoroughly, that we should be happy to make whatever sacrifices the British want us to make.

But anyway, let's enter this in the record. As Will Rogers once said: "America has never lost a war, nor won a peace."

LETTERS

CONGRESSMEN SHOULD READ IT

Thermal Co., Inc.
2448 University Ave.
St. Paul, Minn.

Editor:

Kindly send us 20 copies of the Aug. 13 issue of AIR CONDITIONING & REFRIGERATION NEWS. We feel that the editorial page should be read by everyone including our congressmen. We will see that ours gets a copy together with our comments.

H. W. SMALL,
President

COOLING CAUSE DRY THROAT?

Marshalk & Pratt, Inc.
535 Fifth Ave.
New York, N. Y.

Editor:

In your experience have you found that air conditioning gives the throat a dry and parched feeling?

It has come to the attention of the writer that this is so, but it may be caused only by certain types of air conditioning and also it may be more prevalent among the people who, for example, attend air conditioned movies.

I would appreciate any information your surveys might have disclosed on this subject.

EDWARD F. GERISH,
Director of Marketing

Veterans of the Controls Field



H. W. Sweatt (center), president of Minneapolis-Honeywell Regulator Co., is flanked by Chris Jensen (left), of New York, one of the company's 25-year veterans, and Cran Sharp, export manager of the Brown Instrument division, Philadelphia, at the President's Dinner which featured the recent meeting at the Minneapolis factory of 32 top-ranking field representatives from all parts of the country.

'Old Customers First' and 'No Stock Buying' Now Part of Jobber's Policy

CINCINNATI—What a jobber needs most right now is a top-notch crystal gazer capable of predicting with a considerable degree of accuracy the future trends of governmental restrictions and regulations and material shortages and substitutes, and the effect of all these things on the refrigeration industry in general. That is the considered opinion of Alfred Chadburn, who heads up the refrigeration parts and supplies business of the local branch of Williams & Co.

This same talented and facile seer, Mr. Chadburn suggests, should be able to offer sound and practicable advice on how to ferret out and hold on to jobs with grade A priority ratings, and on how to satisfy customer demands when the items which that customer wants simply are not available.

But lacking such a genie, points out Mr. Chadburn, the jobber must necessarily do the best he can at the crystal gazing and predicting business, and then set about to establish certain definite guiding principles and policies in regard to the handling of customer accounts.

"One of the foremost of such policies put into effect by the Williams company branch here," Mr.

Chadburn says, "is the mandate: 'No new business.' Much as this may hurt at times, it has been found necessary to enforce this ruling in order to supply as nearly as possible the needs of the company's old customers."

"Even 'stock' buying on the part of these old customers is being discouraged. Our counter men know pretty well the requirements of most of our regular trade, and if any customers attempt to order an excessively large supply of some item, for the express purpose of stocking up to avoid any handicap due to shortage, our men explain the situation to them and sell them on the reasoning that buying only for immediate needs will in the long run mean more and better business for everybody."

"This sort of customer protection we believe to be the most equitable and intelligent answer to the existing problem of material shortages."

"Of course one sure way to get materials and supplies which have been placed under priority is to serve as supplier to some firm working on defense contracts or other jobs carrying a high priority rating, and naturally we try to obtain as many such orders as we can."

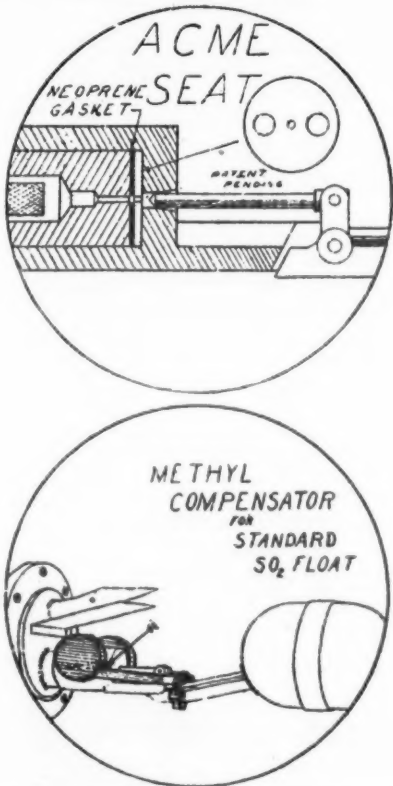
'Compensator Attachment' Permits Use of One Float Valve For Various Systems

SAN ANTONIO, Tex.—A "compensator" for attachment to a float valve to permit a sulphur dioxide flooded system to be converted to a methyl chloride system has been introduced by Acme Products Co.

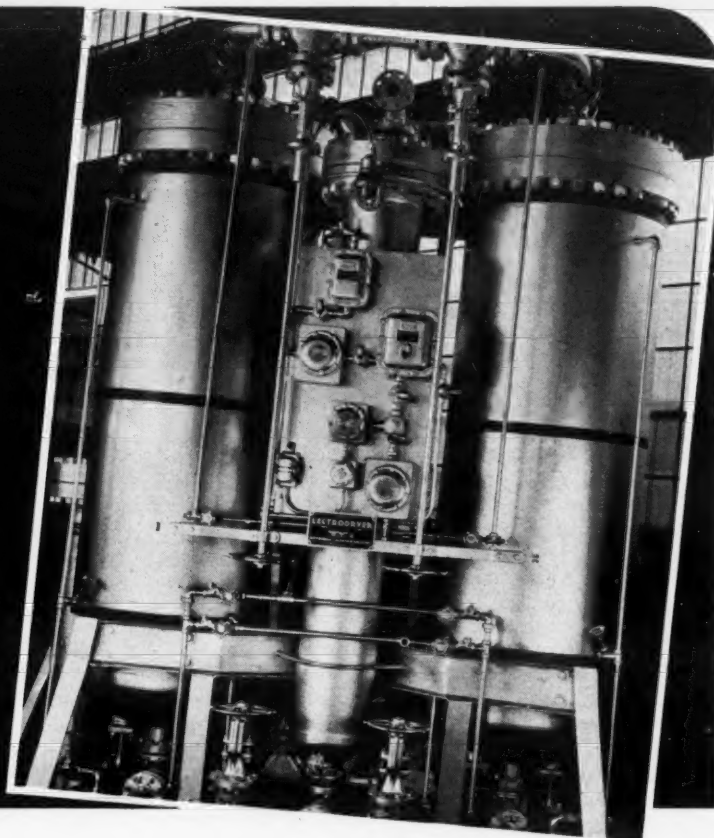
The firm has for several years manufactured a replacement for Frigidaire float valves. Purpose of the compensator is explained by F. J. Luther, head of the Acme Products Co., as follows:

"While Frigidaire did not use methyl in its flooded systems many other manufacturers did. At times there is a need for an added flooded coil in a methyl job and to use a flooded coil that the average service man has taken from some old sulphur or 'Freon' job, it has been necessary for him to buy a new methyl float. I conceived the idea of making a methyl compensator that would convert a standard sulphur dioxide to a methyl float with a lower cost and a minimum of installation work."

Since the installation of a replacement seat does not change the relationship of seat and needle it does not change the calibration in any way, Mr. Luther states.



Activated Alumina proves its worth on this Nitrogen Fixation job



The Answer to Your Drying Problems

This Lectrodryer unit, at work in the nitrogen fixation plant of Shell Chemical Company, Pittsburg, California, is doing a real job. Charged with Alorco Activated* Alumina, it dries 75,000 cubic feet of air per hour, from a dew point at +77° F. to a dew point of -110° F. The working pressure is 350 pounds.

Alorco Activated Alumina can give you this same efficient, dependable drying service. You

can count on it to remove trouble-making moisture from all refrigerating systems, large or small. And it removes acid, preventing corrosion and reducing wear.

Your supply house can furnish refrigerator cartridges charged with Alorco Activated Alumina. ALUMINUM COMPANY OF AMERICA (Sales Agent for ALUMINUM ORE COMPANY) 1908 Gulf Building, Pittsburgh, Pa.

*Registered Trade-mark

These manufacturers supply cartridges and dehydrators charged with Activated Alumina:

American Injector Co.
Fedders Mfg. Company
Henry Valve Company
Imperial Brass Mfg. Co.

Kerotest Mfg. Company
McIntire Connector Co.
Mueller Brass Company
Cyrus Shank Company



★ ALORCO ★
ACTIVATED ALUMINA
DRIES REFRIGERANTS DRY

U.S. Begins 'Census' of Vital Defense Metals

WASHINGTON, D. C.—In order to establish the quantities and locations of vital metals needed for national defense, the Census Bureau, acting as agent for the Office of Production Management and the Office of Price Administration & Civilian Supply, has begun the mailing of 65,000 questionnaires to the manufacturers using these metals in their products.

Questionnaire recipients are asked to report the quantities on hand and the uses made, during August, of antimony, cadmium, chromium, cobalt, copper, ferro-alloys, iridium, lead, manganese or spiegeleisen, mercury, molybdenum, non-ferrous alloys, tin, vanadium, tungsten, zinc, and scrap metal containing any of these.

Another questionnaire will soon be mailed to wholesale dealers in these metals, it is expected.

Specialists Sought For Gov't Defense Agencies

WASHINGTON, D. C.—If you are a trained industrial specialist, you're the man the government's looking for.

An appeal for such specialists to fill important governmental defense jobs has been issued by William S. Knudsen, Director General of the Office of Production Management, and Leon Henderson, Administrator of the Office of Price Administration & Civilian Supply. They based the appeal on World War experience.

Both OPM and OPACS expect to require several hundred specialists, who will be recruited through civil service examinations and will be paid from \$2,600 to \$6,500 a year. It was stated that actual knowledge of practical business operations and ability to make quick, correct decisions are more important than methods of training.

Pamphlets Outline Gov't Purchasing Procedures

WASHINGTON, D. C.—A pamphlet designed to supply information concerning procedures employed by various government agencies in making routine purchases of merchandise for civilian needs has been issued by the Department of Commerce for the information of businessmen who desire to sell to federal units.

It is not likely that the purchasing methods by the various agencies of the government as outlined in the booklet will be radically changed by the impact of defense needs, it was said.

Any businessman desiring to do business with the government may write to the Procurement Division, Treasury Department, Washington, D. C., and request to be listed to receive invitations on items he can furnish. Army and Navy purchasing is explained by two booklets published by the departments.



Artice

*The Preferred METHYL CHLORIDE
for Service Work... Backed by
Du Pont Technical Assistance*



For information about nearest source of supply, write to:
**THE R. & H. CHEMICALS DEPARTMENT
E. I. DU PONT DE NEMOURS & CO. (INC.)**
Wilmington, Delaware
or National Ammonia Division
Frankford P. O. Philadelphia, Pa.

Barnyard Fowl Go Gable - - Not Gobble

Movie Gives the Inside Story of Quick-Frozen Poultry Processing

OMAHA, Neb.—The quick-frozen poultry business is "going Hollywood." The plant of the Jerpe Commission Co. here is the set for, and the plant's employees are the actors in, a sound and color motion picture just filmed under the direction of Donald Barr, New York City, manager of the marketing department of Frosted Foods Sales Corp., subsidiary of General Foods Corp., which merchandises frozen foods under the "Birds Eye" label.

The film was produced with an eye to giving the consuming public an insight into the procedure employed in processing quick-frozen poultry. It covers this procedure from the time the chickens are purchased and picked up until frozen packages are placed in storage.

Here is a brief outline of the way a poultry-freezing plant, such as the Jerpe establishment, operates:



PROTECTION

• Your interests are the concern of the N.R.S.J.A. jobber, identified by the emblem above. He recognizes you as a logical factor in the economic and satisfactory installation of refrigeration equipment and supplies and co-operates fully with you.

His business is dependent upon your success. Make the N.R.S.J.A. jobber your partner. The emblem shown above identifies his interest in your protection.

NATIONAL REFRIGERATION SUPPLY JOBBERS ASSOCIATION

OPPORTUNITY

Manufacturer of low temperature equipment for frozen foods and ice cream desiring to expand seeks an associate to act as treasurer to look after credits, collections, and general office management. Investment of \$15,000 to \$25,000 necessary. The company is a leader in its field and enjoys the highest reputation. References furnished and required. Confidential. Box 1347, Air Conditioning & Refrigeration News.



WE'RE ON OUR WAY TO BIGGER PROFITS WITH ASE

"Bigger profits" is a sure destination when you push A-S-E Froz-n-Food UNIT Lockers. They make it possible for you to meet every refrigerated locker plant requirement. Installation is easy and quick and there is no unprofitable servicing.

Sell UNIT Lockers for immediate needs—make additional profits on repeat orders. Write today for full details on this easy way of increasing your income.

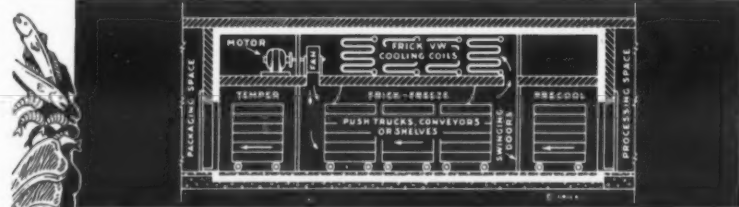
SOLD ONLY THROUGH DEALERS

ALL-STEEL-EQUIP COMPANY

Incorporated

108 KENSINGTON AVE.

AURORA, ILL.



The Frozen Food Industry Prefers

Frick-Freezing Systems

It's a fact that more foods are now being frozen with Frick-Freezing Systems than by any other method. Why? Because these Frick Systems handle ANY food, in season; they assure the rapid cooling and high relative humidity essential to quality; they save time, labor, and up to 1/3 in power cost.

Bulletin 147, describing Frick-Freezing Systems, is of interest to packers, canners, markets, ice and cold storage plants, locker plants, and the growers of fruits, vegetables, poultry and livestock. Just off the press; your copy is waiting; write.

FRICK CO., Waynesboro, Penna.

Proper Preparations For Peach Freezing Given In Detail

MONTGOMERY, Ala.—More of Alabama's peach crop is being quick frozen this year than ever before, according to Eric Alsobrook, chief of the markets division of the State Department of Agriculture. The current crop, he adds, is three times that of last year and the biggest since 1931.

Mr. Alsobrook also points out that many of the state's 3,000 locker users are assuring themselves of an ample supply of peaches and cream this winter by placing a supply of this frozen fruit in their lockers now.

Advice on how to advantageously prepare peaches for freezing is offered by Dr. J. G. Woodruff of the Georgia Experiment Station. Here is a summary of Mr. Woodruff's suggestions:

HERE'S HOW IT'S DONE

"Peaches should be allowed to reach a firm-ripe stage on the tree, and should then be carefully picked. If they are allowed to lie overnight they will become practically soft-ripe, and yet be firm enough to handle without producing mush.

"Next day they should be graded and those that are too green should be laid aside while those that are ripe should be peeled. Peeling may be accomplished by hand or by using a 5% lye solution with a small amount of laundry soap added. This solution should be heated to 145° F. Peaches should be allowed to remain in the solution until the peel is completely loose and the peaches have reached a deep green color.

"After removal from the solution, the peaches should be washed quickly and thoroughly and then dipped in a solution of about 5% citric acid. This will prevent them from browning while they are being sliced and pitted.

"After slicing, the fruit should be mixed with one pound of sugar to five pounds of peaches, and poured back and forth about three times to be sure that each slice is completely coated with sugar. The fruit is then ready to be placed in containers and frozen.

"All of this procedure should be followed sufficiently rapidly so that the peaches are not allowed to brown, because if they brown before they are frozen this browning will increase during freezing and storage."

'Expansion Room' Made Into General Storage Helps Locker Plant

SULPHUR SPRINGS, Tex.—Converting the area reserved for future expansion into commercial storage room has solved the problem of unproductive space for the new Sulphur Springs Locker Co., whose plant is being built here by Southern Refrigeration Co. of Dallas.

The plant will have facilities for approximately 365 lockers. The floor area will permit a 100% expansion if demand dictates.

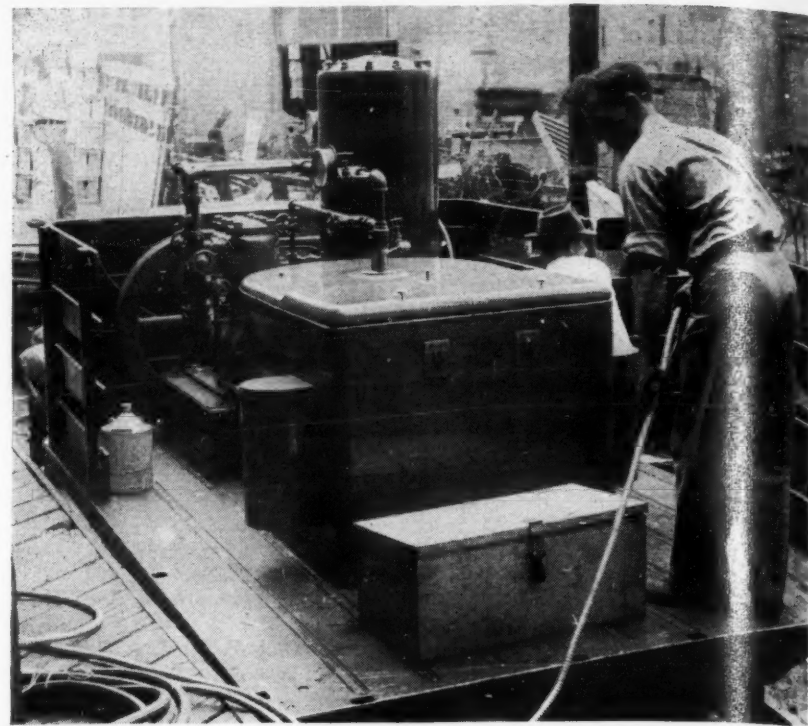
Investigation before building revealed that small fruit producers of the area were interested in commercial refrigeration to give their products safe storage at low cost. Owner S. P. Vick anticipates a profitable revenue from converting his 15 by 17-foot reserve space to their service.

With a frontage of 42 feet 8 inches and a depth of 68 feet 8 inches, the new plant will be of brick, concrete, and steel construction. It will have drive-in facilities on three sides. Modernistic in architectural design, its front will be of vitrolite and glass.

An extra processing room, appended to the rear of the plant proper, will be designed.

Kiermas Erecting a Second Wis. Plant

SHIOCTON, Wis.—A 336-locker frozen food storage plant is being constructed here by Ray Kiermas, who now operates a locker plant at Stephenville, Wis. The one-story concrete building being erected to house the plant will measure 22 x 64 feet.



Quick-Freezing ala TVA

This portable immersion-type quick-freeze unit has been developed by the Tennessee Valley Authority for experimental use in connection with the packing of the southern strawberry crop. It is constructed in such a way that it can be mounted on

wheels and moved from place to place or used as a stationary unit by a small locker plant. TVA officials hope to have a commercial model of this experimental unit ready by 1942. A more complete story on this unit appeared in the July 1 issue of the News.

'Two Hours a Day' of Personal Selling Fills Kansas Locker Plant To the Doors

COLBY, Kan.—When this community's first locker plant was completed in April, 1940, two-thirds of the lockers were unrented, chiefly because potential users were unfamiliar with this modern method of food preservation. Rather than just sit around and wait for people to find out about this service gradually, Freeman McNutt, former operator of a small ice plant and builder of the locker storage plant, went out two hours a day "selling" this new service to residents and nearby farmers.

Within 90 days he had sold every inch of available locker space for two years. However, Mr. McNutt continues his missionary work, and expects to build another plant on the basis of prospects he has already "sold" on the advantages of renting a locker.

"Live Cheaper—Live Better" is the slogan keynoting Mr. McNutt's operations. It is painted in heavy black letters all the way across the 50-foot frontage of the locker plant.

Remodeled from a former ice plant, the locker plant cost less than \$4,000 to construct. It houses 120 lockers and a sharp-freeze room kept at 20° below zero. Upper-tier lockers rent for \$11.50; lower slide-out bin type lockers rent for \$12.50.

A butcher shop is operated in connection with the locker plant, with two sons of Mr. McNutt assisting him here. Processing charges are 1 cent a pound on chickens, 1 1/4 cents on meat of all kinds, and 1 cent on vegetables. Patronage is split about equally between city and rural customers. The latter, however, kill most of their own meat.

Every cut of meat which goes into a locker is marked with the name, date, locker number, and other information which helps to inform the user just what he is getting in locker plant service.

"We find that after a rural customer has used locker plant service for several months, he immediately becomes our most enthusiastic booster," Mr. McNutt said.

FROM 1/4 to 25 TONS OF REFRIGERATION

Brunner Refrigerating and Air Conditioning equipment comprises air and water cooled condensing units for practically all types of commercial applications up to and including 25 tons of refrigeration. Catalog promptly on request. Brunner Manufacturing Co., Utica, N. Y., U. S. A.

BRUNNER

FOR YEARS THE SYMBOL OF QUALITY

The Machine For Your Next Job... If it's a refrigeration job...no matter how big or how small...we can supply Lipman equipment to fit the specifications. Let us work with you. GENERAL REFRIGERATION DIVISION Yates-American Machine Co. Dept. AC-3, Beloit, Wis.

Model 153 Water-cooled Machine



Model 153 Water-cooled Machine

MANHATTAN V-BELTS

BALANCED CONSTRUCTION

Designed for steady trouble-free service, the exclusive construction provides an endless whipcord strength member completely floated in rubber and placed in the neutral axis. MANHATTAN V-Belts resist destructive internal heat, stretch and side-wear, remaining flexible, strong, smooth-running and noiseless.

THE MANHATTAN RUBBER MANUFACTURING DIVISION of Raybestos-Manhattan, Inc. 43 TOWNSEND STREET PASSAIC, N. J.



Once Hung, Sausage Stays Hung In An Air Conditioned Meat Market



Exposed frankfurters and ring bologna hung in this Philadelphia meat market never have to be moved because the establishment is air conditioned, keeping conditions perfect at all times.

PHILADELPHIA—To keep exposed frankfurters and sausages from perspiring and to make customers more comfortable two American Coolers have been installed in the meat market operated at 5419 N. Mascher St. here by Erwin Michelfelder.

The coolers, powered by a model W-200-FH Brunner condensing unit, maintain a 15° differential between indoor and outdoor temperatures in this 16 x 28 x 9-foot store. In addition to eliminating the sweating of the sausages and providing comfort for patrons, the cooling system makes it unnecessary to place the sausage in a cooler at night.

Other refrigerated equipment in the market includes a 14 x 18 x 10-foot walk-in cooler and two 8-foot Gem display cases equipped with A-33-MC and W-150-MC Brunner condensing units. All the equipment was installed by the Gem Mfg. Co., 2219 N. 2nd St. here.

tion to eliminating the sweating of the sausages and providing comfort for patrons, the cooling system makes it unnecessary to place the sausage in a cooler at night.

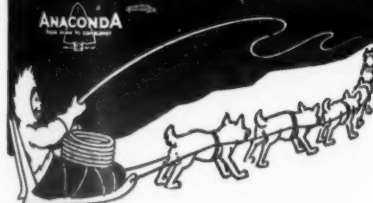
Ceiling Prices Placed On Copper Scrap

WASHINGTON, D. C.—Ceiling prices have been established by the Office of Price Administration & Civilian Supply for copper scrap which, according to Administrator Leon Henderson, "has been selling at levels completely out of line with the price of copper." Scrap copper is a basic material in the production of electrolytic copper and copper ingots.

The ceiling sets price differentials for leading kinds of grades of from 2 cents to 4 cents per pound below 12-cent copper and allows a uniform dealers' margin of 3/4-cent per pound.

Anaconda Copper Refrigeration Tubes

Unusually long lengths!



THE AMERICAN BRASS CO.
FRENCH SMALL TUBE BRANCH
General Offices: Waterbury, Conn.

U. S. GOVERNMENT Specification



Cafeteria Coolers
Filtrine Mfg. Co., Brooklyn



Valves and Fittings
The Standard of the Industry
Kerostest Manufacturing Co.
Pittsburgh, Pa.

System Suspended By 'Sky Hooks' Used In Rayon Job

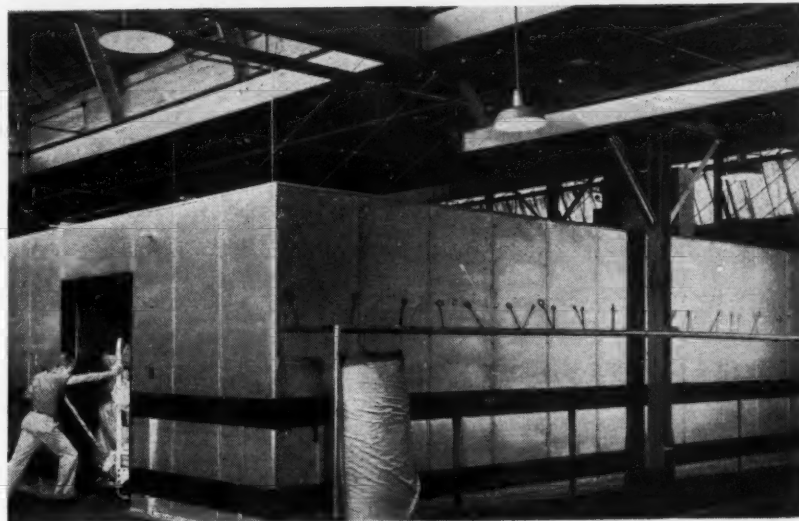
Lindsay Structure Used In Novel Construction

LOS ANGELES—Air conditioning equipment maintains a temperature of 90° F. with less than 1° variation in the new rayon processing room recently constructed in the Los Angeles plant of Firestone Tire & Rubber Co.

To provide maximum floor space in the huge room, 70 feet long, 30 feet wide, and 10 feet high, which serves as a dry and storage room for rayon used in the manufacture of automobile tires, a novel type of construction was used that eliminates all supporting columns. Built of all-steel, prefabricated Lindsay Structure, the roof of the room has been entirely suspended by tie rods attached to overhead beams.

The air conditioning equipment is mounted above the structure on a platform which also is suspended by means of tie rods. Complete installation of the room and cooling system was made by Gay Engineering Co., Los Angeles. Construction of the room required only five days.

The processing room, which is said to be practically air-tight, is lined with 1/2 inch of rigid type insulation. Relative humidity is maintained at 30% or less by cooling coils which extract moisture from the air before it is reheated. Entire system delivers



Exterior view of the Lindsay Structure dry-chamber built for rayon processing work done at the Firestone plant in Los Angeles. Roof of the room is suspended by rods attached to overhead beams, and the air conditioning equipment is mounted on a platform above the room and is also suspended.

4,000 c.f.m. through the cooling and heating coils, and is powered by a 5-hp. Carrier compressor.

To keep heat losses at a minimum, opening and closing of the dry-room doors is controlled by an "electric eye," operated by the trucks which carry the rayon in and out, which insures the doors being kept open only when necessary to allow the passage of the trucks.

M-H Move N. Y. Offices

NEW YORK CITY—Branch office of Minneapolis-Honeywell Regulator Co. here has been moved to a new address, 221 Fourth Ave., reports Arnold Michelson, resident vice president. An additional 8,000 sq. ft. of floor space have been acquired with the change.

FOR GRUNOW SERVICE

ANOTHER MASTER SERVICE MANUAL

This new book tells you—step by step—what to do when you are called to service a Grunow household refrigerator.

It contains all the service information published in AIR CONDITIONING & REFRIGERATION NEWS—plus 45% more—covering both the float valve and Carrene Meter models. One chapter lists the 12 most common things that can happen to a Grunow refrigerator and gives the successive steps to remedy each complaint. Order your copy now.

Chapters

1. Refrigerant and Cycle of Operation.

The vacuum cycle, tables on the properties of Carrene No. 1, how the rotary compressor operates, the oiling system, the evaporator, types of condensing units.

2. Head Pressure, Leaks, and Purging.

Pressure-temperature table, how to check head pressure, detect leaks, and purge Grunow systems. Service tools.

3. Carrene Meter and Checking Charge.

How to install and operate Carrene meters, how to check the Carrene charge, table on Carrene and oil charges for all models.

4. Removing and Replacing Unit Parts.

How to remove and reinstall all parts, step by step, including condensing units, float valves, fans, and evaporators.

5. Thermostats and Electrical Equipment.

Operation and adjustment of thermostats, overload protectors, electrical units and motors, testing capacitors, transformers, and relays. Wiring diagrams of various models.

6. Service Problems and Remedies.

What to do, step by step, when the overload trip button kicks out, the refrigerator does not start, runs too much, starts and stops too often, or is excessively noisy; when it freezes ice without cooling the food compartment or vice versa; when the evaporator defrosts, the food compartment is too cold, the interior sweats, there is an odor in the refrigerator, or a slight shock is felt when the refrigerator is touched.

7. Specifications of 1933-1937 Models.

Model number. Model, r.p.m., and type of compressor. Horsepower and type of motor. Cubic feet, finish, dimensions, shelf area, insulation, frame, seal, and hardware of cabinet. Material and type of evaporator. Number of ice trays. Type of condenser. Make, model number, and type of control.

Order from your jobber or use this coupon.

68 Pages

24 Figures

6 Tables

Price \$1.00

Business News Publishing Co.
5229 Cass Ave., Detroit, Mich.

Date.....

Send copies of Grunow Master Service Manual No. 5 at \$1.00 each. (Add 50 cents for each package of 6 books or less to be shipped outside the U.S.A.)

\$..... enclosed. ☐ Ship C.O.D. and I will pay the postman.

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8-27-41

477 Systems Installed In N. Y. In 7 Mos.

NEW YORK CITY—Four hundred and seventy-seven installations of air conditioning equipment were made by dealers and contractors in the New York metropolitan area during the first seven months of this year, according to utility reports.

Included in the installations were 535 self-contained air conditioning units, of which 264 were of 1 1/2-hp. capacity or smaller and 271 of 2-hp. size and up. Largest users of air conditions, reports show:

Residential	54
Apartment Bedroom	1
Banks	7
Clubs	2
Funeral Homes	4
Hospital Laboratories	2
Hospital Rooms	1
Hotel Guest Rooms	1
Hotel Public Rooms	10
Office Buildings	3
Doctors' Offices	6
Other Offices	130
Restaurants	62
Showrooms	54
Department Stores	8
Retail Stores	89
Theaters	2
Other Commercial	6
Barber Shop	1
Public Building	1
Candy Manufacturing	3
Drug-Chemical Manufacturing	3
Fur Vaults	7
Printing, Etc.	4
Textile Manufacturing	2
Other Industrial	12



Dayton
V-BELTS

Silent, vibrationless, dependable, long-lasting. Powerful grip prevents slippage. A nearby distributor carries a complete stock for appliances and machines.

THE DAYTON RUBBER MFG. CO., DAYTON, OHIO
World's Largest Manufacturer of V-Belts

Servicing Ice Cream Cabinets and Other Low Temperature Equipment

By Arch Black and Dean C. Seitz

Editor's Note: This is the fourteenth instalment of a new section on ice cream cabinet servicing in the series of articles which covers servicing of all types of low temperature refrigeration

equipment for use in retail business.

Service Complaints (Cont.)

COMPLAINT No. 8—Suction line frosts.

Cause No. 1—Leaky expansion valve.

If the automatic expansion valve leaks, more refrigerant will be allowed to enter the evaporator than it requires. As a result some of this refrigerant will overflow into the suction line causing it to frost.

The correction of this trouble has been previously discussed in this section under Complaint No. 1, cause No. 2.

Cause No. 2—Wrong expansion valve setting.

If the setting of the expansion valve is too high in combination with a temperature control which is set below the setting of the expansion valve, the expansion valve will be forced to remain open in an attempt to supply sufficient refrigerant to permit the condensing unit to reduce the pressure low enough to reach the temperature for which the temperature control has been set. This will result in an oversupply of refrigerant for the evaporator producing a frost back on the suction line.

The obvious remedy is to reduce the setting of the expansion valve so that it will maintain a lower operating suction pressure.

Cause No. 3—Too low a cut-out setting on the temperature control.

This point when found in combination with cause No. 2 will produce a frosted suction line. Whenever the temperature control setting is below the setting of the expansion valve, suction line frosting will be the result.

The remedy may be either that described under Cause No. 2, namely changing the setting of the expansion valve or the remedy may be to change the setting of the temperature control itself by raising the setting so that it will be above the pressure setting of the automatic expansion valve.

Cause No. 4—Pitted contacts on temperature control.

If the contacts on the temperature control are pitted so that it sticks and causes the condensing unit to run, the expansion valve will continue to open as the back pressure goes down. This will result in the frosting of the suction line.

The obvious remedy is to clean the contacts or replace them with new ones.

COMPLAINT No. 9—Electric light flickers.

Cause No. 1—Low voltage.

The service engineer should check to make certain that there is not excessive voltage drop between the power supply and the motor. If he does find an excessive voltage drop the installation must be rewired, using the proper size wire in accordance with the local electrical code. If he does not find an excessive voltage drop call the local power company and ask them to correct the trouble.

COMPLAINT No. 10—Radio interference.

Cause No. 1—Sparkling between the motor brushes and commutator.

First polish the commutator and then clean or renew the motor brushes if badly worn.

Cause No. 2—Motor not grounded.

The obvious remedy is to ground the motor by running a wire from the frame of the motor to the condensing unit base.

COMPLAINT No. 11—Overload protection blows out continuously.

The causes and remedies of this trouble are exactly the same as those described previously for the low side float system. The causes will be repeated here in order to keep the record complete but for the remedies the service engineer is referred to the previous section on the low side float system.

Cause No. 1—Low oil level in compressor.

Cause No. 2—Tight compressor.

Cause No. 3—Leaky compressor valves.

Cause No. 4—High head pressure.

Cause No. 5—Fuse too small.

CLASSIFIED ADVERTISING

RATES: Fifty words or less in 6-point light-face type only, one insertion, \$2.00, additional words four cents each. Three consecutive insertions, \$5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Air Conditioning & Refrigeration News, 5229 Cass Ave., Detroit, Mich.

POSITIONS AVAILABLE

SALES ENGINEER by Manufacturer's Agent selling a product used in ventilation and air conditioning. Should be capable of making take-off from mechanical plans. Please give full information, experience, age, etc. Box No. 1348, Air Conditioning & Refrigeration News.

DUE TO Army service, opening is available in Commercial Refrigeration Sales Engineering Department of one of largest manufacturers of refrigeration in United States. College training preferred and previous experience essential in estimating and quoting commercial refrigeration and in handling dealer correspondence and in compilation of manuals and other data. Write full particulars and send snapshot with first letter. Box 1350, Air Conditioning & Refrigeration News.

POSITIONS WANTED

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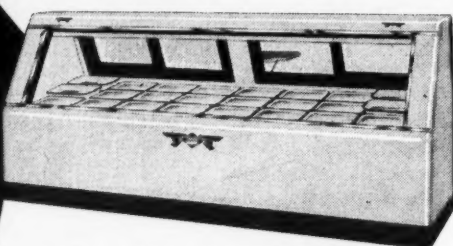
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Senators Query Industry Groups Who Protest Discriminatory Tax

(Continued from Page 1, Column 5)

be increased slightly to meet the quota.

SENATOR LA FOLLETTE. Have you any views as to whether this tax might be pyramided if it stays in the bill?

Mr. VALLEE. We think as it is written it might.

SENATOR LA FOLLETTE. What leads you to that conclusion?

Mr. VALLEE. In our group we make, for example, belts, controls, coils, and if the taxes apply on each item and then on the finished product it might pyramid three or four times. Do I make that clear?

SENATOR LA FOLLETTE. Yes, sir. Is there anything else?

Mr. VALLEE. That is all I have.

THE CHAIRMAN. Thank you very much, Mr. Vallee.

Mr. Brown, do you have any questions?

SENATOR BROWN. No, Mr. Chairman.

THE CHAIRMAN. Mr. Fitzgerald.

STATEMENT OF CHARLES D. WOODRUFF, CHICAGO, ILL., NATIONAL RESTAURANT ASSOCIATION

Mr. WOODRUFF. I am appearing in place of Mr. Fitzgerald. I am Charles D. Woodruff, general attorney for the National Restaurant Association.

THE CHAIRMAN. Your address is in Washington?

Mr. WOODRUFF. In Chicago.

Our objections are directed particularly to the various excise taxes. The

restaurant industry has many peculiarities, and because of that fact it is affected by an unusually large number of these excise taxes which would be imposed. Of them, we would mention the taxes on refrigerators and air conditioning equipment, matches, soft drinks, electrical appliances, electric signs, business and store machines, rubber articles, washing machines, jewelry, coin-operated gaming and amusement devices, cigarettes, liquors, wines and beer, electrical energy, admissions and radios, phonographs and records, all of these being things which are being used widely in restaurants. We wish to mention certain of them in particular.

The preceding speaker mentioned the 10% tax on refrigerators and air conditioning equipment. There presently is a manufacturers' excise tax of 5% on refrigerators of the household type. The proposed revenue act would impose a tax of 10% on all refrigerators, parts, and so on, and upon air conditioners and components. We understand that in early drafts of this measure the tax was simply increased to 10%. It was left applying only to household refrigerators. Then, because of the extent of the commercial uses of refrigerators and air conditioners, and the importance of air conditioning in its commercial uses to public comfort, welfare, health, and efficiency and of refrigeration in the storing and processing of food and so to the public health, we urge the removal of this tax on refrigerators and air conditioners. At least insofar as the tax has been made to apply to the commercial uses of such equipment.

Thus we plead with you for your particular consideration of the tax on mechanical refrigeration and air conditioning, on electrical appliances, on silver-plated ware, and the new admissions tax, the cabaret tax, because we feel that the first three were not intended to apply to commercial uses, and that they single us out unduly, because we feel that the burden of taxes already being imposed on the industry is too great.

THE CHAIRMAN. Mr. William B. Henderson, from Washington, D. C.

STATEMENT OF WILLIAM B. HENDERSON, WASHINGTON, D. C., EXECUTIVE VICE PRESIDENT, AIR CONDITIONING & REFRIGERATING MACHINERY ASSOCIATION, INC.

"The Revenue Bill of 1941 (H. R. 5417), as passed by the House of Representatives, contains a substantial inequity and an obviously unfair discrimination against the users and manufacturers of refrigerating and air conditioning machinery by proposing a 10% excise tax on the sale of all refrigerating and air conditioning machinery.

"As the members of the finance committee undoubtedly are aware, few items of mechanical equipment are as essential to the national welfare and to the national economy as the refrigerating machinery used for commercial and industrial purposes. Controlled temperatures and humidity are required for the processing of hundreds of products in common daily use.

"To illustrate: controlled temperatures and humidity are essential to the output of many chemical products; of most drugs, medicines, serums, and vaccines; of explosives; of petroleum products (particularly high octane aviation gasoline); of synthetic products such as nylon, rayon, and neoprene; of precision instruments, range finders, bomb-sights, airplane instruments, optical goods, and many other products.

"Important though refrigerating and air conditioning machinery is to American industry, refrigeration is of indispensable importance in maintaining and protecting the health of the civilian population and the armed forces of the United States.

"Without refrigeration, very little meat could be moved from the farm to the consumer. Each year more than 80 million animals go from the farmers' pasture land to 1,500 meat packing centers with their huge

installations of refrigerating machinery. From those packing houses, refrigerated railroad cars and motor trucks take the meat to over 200,000 meat stores and the thousands of cold storage warehouses and locker storage plants throughout the country. Each step of the way, from the farm to the consumer's table, the 17 billion pounds of meat consumed annually in the United States are protected by the operation of industrial and commercial refrigerating machinery.

"Milk is the largest single source of cash income on 5 million United States farms. Annually, 25 million cows produce some 50 billion quarts of milk. The milk goes from the farm to 13,000 dairies, 6,700 ice cream plants, and 11,000 manufacturers of other dairy products to be processed for the ultimate consumer. Each day, 45 million quarts of fluid milk alone are used in homes, restaurants, hotels, and schools. Without refrigeration, the modern dairy industry could not exist.

"Millions of tons of fresh fruits and vegetables move each year from farms and plantations to cities and towns throughout the nation. It is commonplace for highly perishable fruits and vegetables to be moved thousands of miles from the point of origin to the markets where the housewife buys them in practically as fresh and nutritious a condition as the day they were picked. This miracle of distribution would be impossible without commercial and industrial refrigeration.

"In the Revenue Bill of 1941, as passed by the House of Representatives, it is proposed to levy a 10% excise tax on all types of refrigerating and air conditioning machinery, whether used in the home, in the meat packing plant, in the dairy, or in the munitions factory.

"Refrigerating and air conditioning machinery is the only type of industrial machinery singled out for taxation in H. R. 5417. It is the only type of commercial machinery (with the exception of commercial laundries and commercial trucks) singled out for taxation in H. R. 5417.

SENATOR DANAHER. You might include business machines.

Mr. HENDERSON. When I was speaking of the commercial machinery, Senator, it was of the truck type. I think more of the business machinery has been an appliance rather than machinery.

SENATOR BROWN. Well, we have been taxing automobiles, and things of that kind.

Mr. HENDERSON. Well, it is proposed to tax a commercial truck. I say that that and the commercial laundry machinery are the only types in addition to the commercial refrigerating machinery on which it is proposed to levy a tax.

Now, the manufacturers of refrigerating and air conditioning machinery cannot understand why their equipment, which is so indispensable, so vital, should be singled out for this tax when there are hundreds of other types of machinery which are not so fundamentally essential to our national welfare which are not proposed to be taxed.

SENATOR BROWN. Did you include photographic apparatus also? That is taxed.

Mr. HENDERSON. No; I did not, Senator.

Again I think of that more as an appliance rather than from a machinery angle. My thought may be wrong, and probably is.

SENATOR BROWN. Optical equipment is also taxed.

Mr. HENDERSON. Yes. SENATOR LA FOLLETTE. Mr. Henderson, does the refrigerating industry use any more so-called strategic defense materials than any other machinery-manufacturing industry?

Mr. HENDERSON. We use a great deal, Senator La Follette. Whether we use more than the general run of machinery industry, I could not say.

SENATOR LA FOLLETTE. The only ex-

(Concluded on Page 12, Column 1)

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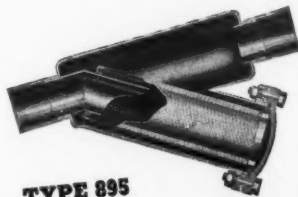
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Some Senators Seem To Agree With the Industry's Viewpoint at Tax Hearing; Extent of Metals Use Is Questioned

(Concluded from Page 11, Column 3)

planation I have heard anybody give—I am not sure it is an explanation—for singling out some of these things for taxing was that they interfere with the defense program. I cannot see how this particular industry has any more materials for defense, unless you know of some reason, than some other industry turning out machinery which is not taxed.

MR. HENDERSON. That is perfectly right, Senator La Follette.

SENATOR LA FOLLETTE. You do not have to have any special kind of metals, do you?

MR. HENDERSON. No; not any more than the general run of machinery, I would say.

SENATOR LA FOLLETTE. That is what I am driving at.

MR. HENDERSON. Yes; that is what we cannot understand, Senator, that we are singled out over all these other types of machinery to bear this tax.

SENATOR LA FOLLETTE. Maybe somebody used a method of taking a number from 1 to 10.

MR. HENDERSON. It may be; yes. I might say a great deal of our production now, better than 40%, is going into defense. By that I mean the Army and Navy, the merchant marine, the factories, and others are the heaviest customers today.

SENATOR BARKLEY. Is it not a fact, too, that such metal as you do use in the commercial refrigerating plant is only a small percentage of the total used by refrigerating plants generally? I am including the household box.

MR. HENDERSON. We would almost have to take a specific metal, Senator, to run that through, because some manufacturers use a particular metal in their machine which another might not use. For example, one might use an aluminum-alloy piston and another a cast-iron piston, so you would have to take a type of metal and run it right through.

Our industry is not objecting to this tax per se, because we are willing to pay our fair share. We do realize there are tremendous expenditures which have to be met in the defense program and that it does call for heavier taxation. We are willing to bear our fair share. We do think the gentlemen of the committee will agree that the singling out of this one industry above all others is manifestly unfair. We do ask that the 10% excise tax on the sale of commercial and industrial refrigerating and air conditioning machinery be eliminated from the revenue bill of 1941.

I would be glad, Mr. Chairman, to answer any questions which the members of the committee might have.

THE CHAIRMAN. Are there any questions?

SENATOR LA FOLLETTE. There is one other thing I would like to ask you. There is a tax here on household refrigerators, is there not?

MR. HENDERSON. I believe there is, Senator; yes, in the revenue bill. That is something which I have not brought up particularly. My interest

is in the commercial and industrial types.

SENATOR LA FOLLETTE. You make the machinery with which the ice manufacturers will have to make the ice, do you not?

MR. HENDERSON. That is true; yes.

THE CHAIRMAN. Very well, Mr. Henderson. Thank you very much.

SENATOR BROWN. I was to ask him one question.

THE CHAIRMAN. All right, Senator.

SENATOR BROWN. When you sell machinery under this present 5% tax, the household equipment tax under the old revenue law, you add that to the price, don't you, just as the automobile manufacturer adds it to the price of the automobile?

MR. HENDERSON. It will be added, I should imagine.

SENATOR BROWN. I mean, you have been doing it in the past.

MR. HENDERSON. I could not say, because the manufacturers which I represent do not make the domestic type of refrigerating machinery; it is more the heavier type.

SENATOR BROWN. You are not complaining about paying the tax because the consumers are going to pay the tax. You do feel it is going to diminish your business by making the equipment which you sell more expensive?

MR. HENDERSON. It is not that, Senator Brown; no. These are the farmers, the industrial people, and the people like the gentlemen from the restaurant association, who are going to be unfairly hit, whereas these hundreds of other types of machinery are not going to be taxed.

SENATOR BROWN. That is discrimination; is it not?

MR. HENDERSON. That is discrimination, sir.

SENATOR BROWN. But the consumers generally are going to pay the tax. You are not going to pay.

MR. HENDERSON. That is right.

SENATOR TAFT. It really increases the cost of distribution of all the food products.

MR. HENDERSON. That is right, Senator; yes.

"Why refrigerating and air conditioning machinery, so essential and so indispensable to the national welfare, should be asked to shoulder this substantial additional burden while hundreds of other types of machinery of much lesser fundamental importance escape being taxed in the same ratio is something which the manufacturers of refrigerating and air conditioning machinery find it difficult to understand.

"The manufacturers of refrigerating and air conditioning machinery fully appreciate that heavy taxation is necessary to meet the cost of the national defense program and they are prepared to bear their fair share of the load. But the excise tax proposal as outlined in the Revenue Bill of 1941 as passed by the House of Representatives is obviously unfair to us and to the thousands of our customers in agriculture and industry.

"Specifically, we ask the consideration of the Finance Committee of the United States Senate to the elimination from the Revenue Bill of 1941 of the proposed 10% excise tax on the sale of commercial and industrial refrigerating and air conditioning machinery."

THE CHAIRMAN. Very well, Mr. Henderson, thank you. Mr. Holcombe.

STATEMENT OF A. H. HOLCOMBE, JR., PHILADELPHIA, PA., REPRESENTING NATIONAL REFRIGERATION SUPPLY JOBBERS ASSOCIATION

THE CHAIRMAN. Mr. Holcombe, you are appearing in the place of Mr. Borden?

MR. HOLCOMBE. Yes, sir.

THE CHAIRMAN. All right, sir. Will you state to the stenographer there, your name and address and for whom you appear?

MR. HOLCOMBE. My name is A. H. Holcombe, Jr. I am the proprietor of Victor Sales & Supply Co., and vice president of the National Refrigeration Supply Jobbers Association. We are interested in a change in section 3405 of the proposed Internal Revenue Code amendment.

Our position in the mechanical refrigeration and air conditioning industry is that we are a group of independent, privately owned wholesalers who carry the stocks of equipment and supplies needed to service the refrigeration requirements of the country. We buy from the independent manufacturers and sell to the local refrigeration mechanics who do the actual service and repair work.

There are approximately 250 such independent wholesalers distributed as needed throughout the entire country. This group has developed from scratch within the last 5 years, and become useful, self-sustaining, small business organizations in their communities.

Because of the distribution structure of our industry some companies will be favored and others penalized. By this I mean that those who both manufacture and merchandise direct to the consumer will pay the tax but once. The manufacturers' sales through independent wholesalers will be taxed two and three times. The above-mentioned 250 independent wholesalers represent the lifeblood of the industry as they form the bulk of the distribution channels.

As has been mentioned in previous briefs this tax is inflationary in trend as affecting food costs. Mechanical refrigeration only is being taxed and not its competitor, ice refrigeration.

The cost of mechanical refrigeration equipment in many cases is approximately 50% material and 50% labor of installation and service.

Mechanical refrigeration is essential in modern industry. Many of the common articles used in our daily life depend on it for mass production at low prices. Soap, movie film, medical supplies, chemicals, all of these and many others would be affected by increased costs. None of these items could be considered luxuries as could comfort cooling of offices and stores. Even this has been proved medically helpful as well as an aid to efficiency.

Mechanical refrigeration equipment as now scheduled will not compete with the national defense program, but will supplement it. Our industry is already feeling the impact of the defense program seriously and will need all of its resources in order to keep existing food preservation equipment in operation.

We favor a general manufacturers' sales tax to be collected at the source

on all commodities exempting certain foods. This will spread the effect evenly throughout all industry and bring in a more substantial revenue compared with the relatively small amount expected from this section of this bill.

SENATOR BROWN. I want to interrupt a moment. You say you fear this tax is going to be pyramided. The manufacturer will pay the taxes, then the wholesaler will also pay the taxes.

MR. HOLCOMBE. Yes, sir.

SENATOR BROWN. That is not true in regard to paying the automobile tax. It is just paid once. This section 3406 says:

"There shall be imposed on the following articles, sold by the manufacturer, producer, or importer, a tax equivalent to the rate on the price for which sold, set forth in the following paragraphs."

Then, it includes sporting goods, luggage, and the electrical appliances that you are talking about. I do not think there is any double taxation there.

MR. HOLCOMBE. We are thinking of the component parts that go to make up the servicing of this refrigeration equipment rather than the equipment itself. There would only be one tax on the complete unit, refrigerating unit, such as we had a picture of here a few minutes ago.

SENATOR BROWN. It seems to me that could pretty well be covered by regulation. I do not think it is the intent of this committee to pyramid that tax. I think it should be paid once and for all. I am glad you brought it up, because it ought to be clarified. It seems to me as it is now it is only one tax.

THE CHAIRMAN. Is there something else you wish to put in?

MR. HOLCOMBE. The previous speaker was asked about the amount of metal that had to do with national defense. We would like to enter into the record here some figures which have

been collected showing the amount of the common metals that are used as compared to the amount of the same metals that are required for one battleship. Could we enter that into the record?

THE CHAIRMAN. You mean that whole paper?

MR. HOLCOMBE. Just this sheet here which illustrates the facts that are on there, not the diagrams.

SENATOR TAFT. I suggest he make a summary statement and put it in the record.

THE CHAIRMAN. You may do that, if you wish to. You simply want to show the quantity of material used, do you not?

MR. HOLCOMBE. That is right. The question came up about steel, for instance. The steel that is required by the commercial refrigerating machine manufacturers is the steel required for one-fifth of a battleship.

SENATOR BROWN. You mean that is all the steel that is used in one year?

MR. HOLCOMBE. That is right. We will make such a table.

THE CHAIRMAN. Yes.

MR. HOLCOMBE. Thank you, sir. (The table referred to by Mr. Holcombe is as follows:)

There were 361,000 commercial refrigerating machines sold in 1940. To make these requires:

28 tons of tin = that required in 7/10 of a battleship = 3/10000 United States consumption.

153 tons of zinc = that required in 3/10 of a battleship = 1/5000 United States consumption.

187 tons of aluminum = that required in 2/5 of a battleship = 9/10000 United States consumption.

232 tons of rubber = that required in 2 9/10 of a battleship = 2/5000 United States consumption.

1,072 tons of copper = that required in 1 battleship = 1/1000 United States consumption.

5,729 tons of steel = that required in 1/5 of a battleship = 1/5000 United States consumption.



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FOR HUMAN COMFORT



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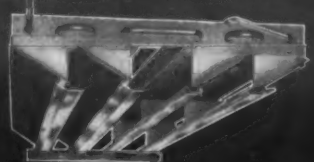


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